DOCUMENT RESUME

ED 032 726 EF 003 498

Education Specifications: New Middle School.
Philadelphia School District, Pa.
Report No-P-614
Pub Date [68]
Note-125p.
EDRS Price MF-$0.50 HC-$6.35
Descriptors-Building Design, *Educational Specifications, *Facility Guidelines, Facility Requirements, *Middle Schools, *School Buildings, School Construction, School Planning, *Spatial Relationship
Identifiers-Pennsylvania, Philadelphia

Educational specifications are presented delineating instructional space requirements and relationships for a middle school in Philadelphia, Pennsylvania. A description of the desired educational programs is followed by a discussion of those spaces necessary to house the program and the relationship that they must bear one to the other. Descriptions are presented of the educational situation, components of the educational program, design requirements, and space allocations and general area relationships. Facility specifications are included for each of the school's 11 centers. Graphic illustrations are also given. (FS)

EDO 32726

U.S. DEPARTMENT OF HEALTH, EDUCATION & WELFARE
OFFICE OF EDUCATION

THIS DOCUMENT HAS BEEN REPRODUCED EXACTLY AS RECEIVED FROM THE PERSON OR ORGANIZATION ORIGINATING IT. POINTS OF VIEW OR OPINIONS STATED DO NOT NECESSARILY REPRESENT OFFICIAL OFFICE OF EDUCATION POSITION OR POLICY.

EDUCATIONAL SPECIFICATIONS

NEW MIDDLE SCHOOL

SCHOOL DISTRICT OF PHILADELPHIA
PHILADELPHIA, PENNSYLVANIA

OMA

EF 003 498
51678

L.A.
S.S.
MATH
SC.
F.L.
ART
MUSIC
TECH.
COMM.
H.M.
P.E.
HLTH.

EDUCATION SPECIFICATIONS

NEW MIDDLE SCHOOL

SCHOOL DISTRICT
OF
PHILADELPHIA

Philadelphia, Pennsylvania
Project No. 614

SCHOOL DISTRICT OF PHILADELPHIA
Parkway at 21st Street
Philadelphia, Pennsylvania

BOARD OF EDUCATION

Richardson Dilworth — *President*
Rev. Henry H. Nichols — *Vice President*
Mr. William Goldman
Mrs. Albert M. Greenfield
Mr. George Hutt
Thomas A. Masterson, Esq.
Jonathan E. Rhoads, M.D.
Mr. William Ross
Robert M. Sebastian, Esq.

ADMINISTRATION

Dr. C. Taylor Whittier
Superintendent of Schools

Mr. Harry M. Perks
School Facilities Division

Dr. Ernest O. Kohl
District Superintendent for School Facilities

Mr. Michael P. Marcase
Director, School Planning

Mr. Edward W. Deissler
Director, Architecture & Engineering

Mr. Walter Krueger, Jr.
Director of Construction

ARCHITECT

Geddes, Brecher, Qualls & Cunningham

EDUCATIONAL CONSULTANTS

Odell MacConnell Associates, Inc.

TABLE OF CONTENTS

	Page
INTRODUCTION	1
THE SITUATION	1
THE EDUCATIONAL PROGRAM	3
DESIGN REQUIREMENTS	15
SPACE ALLOCATIONS AND GENERAL AREA RELATIONSHIPS	41
FACILITY SPECIFICATIONS	
A. ADMINISTRATION CENTER	45
B. GRADE CENTER	53
C. INSTRUCTIONAL MATERIALS CENTER	56
D. HUMANITIES CENTER	60
E. MATHEMATICS CENTER	65
F. SCIENCE CENTER	68
G. FINE AND PERFORMING ARTS	73
H. PRACTICAL ARTS CENTER	81
I. DINING/ACTIVITY CENTER	89
J. PHYSICAL EDUCATION CENTER	95
K. MAINTENANCE AND OPERATION CENTER	103
AND FINALLY	106

I N T R O D U C T I O N
(About This Document)

The School District of Philadelphia has adopted a Master Plan for the provision of the best possible school facilities for all of its pupils. This plan includes a schedule for the alterations and improvements of existing buildings, and the construction of new facilities.

This document constitutes the Educational Specifications for a new MIDDLE SCHOOL to be constructed at Wayne and Chelten Avenues in the Germantown Area of Philadelphia, and considered together with the District's Technical Criteria, provides a set of written directions to the Architect for his design of the total project.

New school buildings must be designed and constructed so that all aspects of the educational and service programs can be geared to changing instructional methods and future curriculum content, as flexibility requires that facility design stems from a knowledge of what and how children learn, and in what manner they will be taught. Planning, therefore, must start with a determination of the desired educational program, and then proceed to a description of the facilities needed to house this program.

The purpose of providing educational specifications, therefore, is to develop in a written form a description of this desired educational program, those spaces necessary to house the program, and the relationship that these spaces must bear

one to the other. Using this document the architect may then derive functional relationships and evolve a design which best serves the educational goals of the School District of Philadelphia.

These Educational Specifications have been developed cooperatively, and represent a team effort on the part of educators, architects, engineers, and laymen. Throughout the planning the concept held foremost is that the resulting physical plant must not only serve as a tool for teaching, but also as a center for many community functions.

T H E S I T U A T I O N

The School District of Philadelphia has found that Middle Schools, housing grades five through eight, allow the greatest educational advantages to pupils in the age group ten through fourteen, Further, it is known that the facilities to house programs for these age levels have certain unique features.

> The problem, therefore, centers on a description of the desired instructional and community educational programs which this new school facility must house, the spaces these programs require, and the relationship of these spaces to each other in a situation wherein 1500 pupils of grades 5 - 8 occupy the building during normal and extended school hours, and the facility is used as a community center during other periods.

The problem is further complicated by the need to plan for the future - in terms of growth in size of student body (possible 25% expansability required), and in the changing instructional use of spaces as both curriculum and teaching methods advance. Additionally, flexibility in already accepted teaching techniques requires that certain spaces be designed with sufficient versatility for immediate conversion from one function to another during any given period of the school day.

Within the new Middle School spaces must be provided to house groupings of students for large and small group instruction, as well as for standard classroom groups and individual study. An Instructional Materials Center must be the focus of all student circulation, while the auditorium and gymnasium/pool facilities must have convenient

access for community use. The administrative suite should be related to major control points of the school, and faculty office-work spaces must be provided to facilitate newer teaching techniques. Special instructional spaces such as shops, home arts laboratories science laboratories, and fine arts laboratories should be more closely related to the upper grades, and allowance must be made for organization by grade or subject centers.

Further, because of changes and refinements in instructional methodology, the new school plant must be relatively free of unyielding physical barriers and allow for future adaptability.

In summary, the new Middle School design must accommodate 1500 students (equal numbers of boys and girls), yet be expandable for future growth and adaptable to future changes in educational program.

T H E E D U C A T I O N A L P R O G R A M

The Middle School program is a distinct and complementary segment of the total organizational framework for education in the public school system of Philadelphia:

- It is designed to meet the academic, physical, emotional, intellectual, social, and aesthetic needs of young adolescents, ages 10 to 14, and to provide an educational program which contributes to the fulfillment of commonly accepted educational objectives. It fosters the all-around development of each pupil as he seeks a way of life which is satisfying to him as a person and which is in harmony with the democratic ideals of our changing society.

- It is a sound organizational unit in our public educational system. Teachers can be utilized as specialists in varying degrees of departmentalization with facilities and equipment designed to fit the needs of this age group and the departmentalized specialty.

- The Middle School curriculum is significantly different from the elementary school and the high school and is aimed at meeting the educational requirements, problems and interests of young adolescents.

- By requiring many common experiences of all students, the Middle School program is basically more general in nature than specialized. It emphasizes the continual improvement of fundamental skills, yet provides elective experiences to prepare the student for a more specialized curriculum in high school.

- The Middle School educational program is based on sound guidance, principles and practices.

The basic functions of the Middle School are to provide for a smooth transition from elementary to high school, to furnish educational facilities and an educational

program suited to the growing degree of specialization of interests of pupils at this level, to serve as an exploratory educational situation in which the students may discover their potential for academic and vocational pursuits, and to provide the most efficient, effective, and satisfying relationships between the student and the school community.

- Experience rapid and irregular physical growth, mature in sex characteristics and patterns, and adjust to new emotional drives. They are often erratic and unpredictable in emotional reactions and behavior.
- They experience unique problems in social behavior, particularly in boy-girl relationships. They are developing personal and group standards of right and wrong.
- They are highly idealistic, are intensely loyal to their friends, and have urgent need to feel accepted by their group.
- They present a paradox in that they may be highly sensitive, easily hurt, and may suffer acutely when slighted or offended, yet at the same time they are sometimes cruelly insensitive to the feelings of others.
- They broaden their interests and search for ways to develop their talents and to exercise their choices, both in and out of school.
- They seek self-expression and self-direction and try to free themselves from dependence on adults at home, at school and in the community; yet inwardly they want discipline and definite limits set for themselves.
- They possess a wide range of individual differences. Their academic, physical, emotional, intellectual, social, and aesthetic abilities differ greatly. They do not appreciate fully the extent or the limits of their capabilities.

EDUCATIONAL AIMS

Recognizing that learning occurs as an individual process, the fundamental objectives

for this project is to create an environment which will enhance this phenomena. As a direct correlate of independence in learning, it is apparent that when the responsibility for scholarship is placed upon the student rather than upon the teacher, the stage is set for education in its true sense. With focus on the individual student, it is essential to recognize and provide for individual rates of learning and accomplishment. In this light, it is increasingly important to challenge the traditional concept of a fixed time module of the same duration for each subject area. While the learning phenomenon takes place only within each individual, it should be remembered that this discovery can occur during a lecture involving hundreds of students, or during a discussion with only a handful of students.

No person, or group of persons, can predict with certainty the exact nature of the intermediate grade school program of the future. There are, however, certain discernible forces at work in reshaping the educational program. The major ones of these and their consequent building implications are identified for planning purposes.

STAFF UTILIZATION

The newer forms of instructional methodology include provisions for the effective utilization of staff and application of flexible educational techniques. Teacher aids, student teachers, and teaching interns, to assist with the non-professional and professional tasks now performed by teachers, would be utilized by teaching teams. The application of these

designs will be tailored in accordance with the availability and competencies of the staff and the willingness of these people to cooperate and work together.

The team approach to teaching takes many forms, depending on the instructional situation and the staff involved. In the Philadelphia Schools, it is possible to observe:

(1) Horizontal teaming - or the approach whereby a given number of teachers share the responsibility for teaching a given number of pupils at a specific grade level. This cooperative teaching technique is most commonly found in open-area elementary grade schools across the Nation, and is most often inter-disciplinary, with teachers of a team representing several subject areas.

(2) Vertical teaming - is most often found in high school, junior high and middle school programs and more recently in ungraded programs at all levels. In vertical teaming, teachers involved with a particular subject or activity area (intra-disciplinary) cooperate to present instruction to groups of pupils across grade level or chronological age lines.

(3) Situational teaming - includes, by definition, the great variety of situations wherein two or more teachers plan together to provide students with the benefit of the best talents of each teacher. These situations may include any combination of the above noted teams.

VARIABLE GROUPING

A wide variety of student grouping patterns are developing to fit specific kinds of learning situations. The range includes large groups (100 to 300), medium groups (25 to 60), small groups (5 to 15), and individual study (1). Variable grouping is based

on the premise that not every phase of every subject can be taught best in uniform classroom groups--and not all students learn all things best in such groups. Experience has indicated that introductory materials, films, demonstrations, and much general background information can be presented most efficiently by a talented teacher in a large group situation. Discussions, more personalized teacher-student contact, and more individually tailored instruction can be handled better in smaller seminar groups or by individual study.

NONGRADEDNESS

The vertical lock-step graded organization of schools is being replaced in many systems by non-graded or ungraded grouping of students. This organizational concept recognizes the individual differences among children, and provides for continuous educational progress for each child. The bright child moves ahead to more difficult tasks generally reserved for the next grade in a graded school organization, and the slower child may take additional time to gain the concepts which are difficult for him. Each child may work at various levels in different subjects, thus permitting him to learn and progress as rapidly or slowly as his interests and ability permit.

GROUPING TECHNIQUES

In general, instructional will be organized around four kinds of activities: large group

instruction; intermediate or conventional class instruction; small group discussion, and individual study.

Large group instruction will include a number of activities carried out in groups of 100 or more students. (Of course, limited enrollments or the nature of the subject may reduce that figure.) Instruction and discussions will be conducted by teachers who are particularly competent, who have more adequate time to prepare, and who will utilize the best possible instructional aids. Large group activities may occupy a portion of the student's time. However, the amount of time spent in large groups will change according to subject and grade level at different stages within a subject, and in accordance with student interest and maturity. Examples of activities that might take place in these large groups would be illustrated lectures, special demonstrations, testing, presentations by guest speakers, televised lessons, and motion pictures.

Intermediate group instruction will include many learning activities and functions which are unsuited to large group instruction. This grouping encompasses the conventional classroom activities and may also be used to complement the instruction which has taken place in large groups. This form of instruction will permit the continuance of conventional classroom organization until such time as an orderly development toward other forms of instruction may take place.

Small group instruction will involve 12 to 15 students and a teacher engaged in depth

exploration of concepts through the guided interaction of students' own thinking. Examples of the activities that might take place in small groups would be analytical discussions, exploratory discussions, conferences, reporting, testing clarity of understanding, and panel discussion.

Individual study will engage students' time in study activities as individuals or in groups of two or three with a minimum of supervision. Examples of the activities that might take place on an individual or person to person basis would be reading, writing, drill, research, conference, and memorization. These activities will take place in study carrels, project and materials center, museums, workshops, libraries, and laboratories in and outside of the school. Individual study activities will require that students progressively take more responsibility for self-direction. The amount of time will vary according to subject, grade-level, and student maturity.

SCHOOLS WITHIN A SCHOOL CONCEPT

As school plants in urban complexes grow larger to accommodate the greater numbers of students resulting from high housing densities, educators have sought means for maintaining a child's identity within these large settings. Additionally, the transition from the smaller and more simply oriented elementary schools into large completely departmentalized high school situations has created adjustment and identity problems for some students. To contravert the psychological barrier to learning arising from these situations, it has been found possible to group students in ways that provide for small school settings

within the larger institutional unit. For instance, all fifth graders might be grouped into a "school" within the Middle School, and instructional programming for these pupils might be organized as a unit apart from older youngsters or higher grade levels, thus providing for a transition period between the smaller elementary school and the new middle school unit.

FLEXIBLE SCHEDULING

Flexible scheduling bases on multiples of smaller modules of time, is being developed to cope with the problems of equivalency of subjects diversity in learning outcomes, individual differences among pupils, and the need for greater continuity in the study of some subjects. A variation in the length and number of periods will create different movements and traffic patterns throughout the school plant.

INSTRUCTIONAL MATERIALS CENTERS

The Middle School concept has in part emerged from an awareness on the part of educators of the changing psychological needs of our youth in the middle-grade age group. These include the need of inquiring minds to explore and react to the environment, and knowledge of this need provides the teacher with an unusual opportunity, given the proper resources and facilities, to help the student develop life-long habits of independent study and investigation.

Instructional Materials Centers (IMC) have been created to provide the necessary resources for such programs. Departing from the traditional concept of a "library" the IMC is located in the focal point of all school circulation, and provides spaces for independent and/or group study amidst the collection of the material resources and modern electronic communication media of the school. The IMC staff, in addition to being custodians of materials, works activily with teaching staff to develop students' skills in locating materials and in understanding and interpreting materials that have been located.

COMMUNICATION MEDIA

Middle Schools are making available to their teachers and students all possible avenues to knowledge, appreciation, and understanding. Electronic laboratories, open and closed-circuit television, video tape, overhead and to-the-rear projection, automatic response systems, teaching machines, radio, disc and tape recordings, wireless induction loops, and many other kinds and varieties of materials and equipment are available to supplement the teaching-learning process. Typically, communications centers are developed in conjunction with Instructional Materials Centers to coordinate and sychrronize the use of all media.

INCREASED SCHOOL PLANT USE

In addition to the above-listed forces shaping the educational program, increased use of the school plant for adult educational programs, as community recreation centers, and

for year-round educational activities merits planning consideration. The particular requirements for these secondary uses have implications for parking, material and project storage, location within building for security and access, and zoning for control of utilities.

IMPLEMENTATION OF THE PROGRAM

Essential to an intermediate school is a successful guidance program. Guidance at this level includes educational, pre-vocational and personal counseling. Pupils are helped to understand their aptitudes and are encouraged to develop them. Such a program identifies the gifted and those with limited ability so that the sourse of study and instruction can be adjusted to meet their needs. The staff also identifies the causes of educational and social maladjustments by means of individual testing, conferences with the pupil and his teachers and parents, and the utilization of every diagnostic or remedial service offered by specialists in the school and in the community.

A successful program depends upon: appropriate textbooks, audio-visual materials, an adequate plant including a library, a gymnasium with necessary facilities and with equipment, an adjacent play area of recommended size, a cafeteria, and an auditorium where the entire student body or large segments of it can meet together. Rooms are specially designed and equipped for teaching the various subjects of the curriculum, particularly for industrial arts, homemaking, music, arts, science, typing, drama, and

other specialized fields.

Implementing the program is a specially trained staff, including teachers, librarian, nurse, counselors, other guidance specialists, administrators, clerical, and operational personnel.

SUMMARY

Consistent with the educational purposes it serves, the Middle School offers a curriculum which recognizes the conditions and requirements of the society of which it is a part, and which also takes into account the general characteristics as well as the individual variations among its pupils. It provides schooling for all educable youth, yet allows for differences in programs of study. In so doing, the Middle School requires materials, facilities, and staff appropriate to its task and to the youth it serves.

As it strives to meet its responsibilities and achieve its purposes, the Middle School gives emphasis to general education and extends the basic skills of communication and computation. At the same time, the Middle School features certain other desirable functions, by providing classes which challenge the varying levels of ability and interests, exploratory studies, activities outside the classroom, needed guidance services, and a program designed to bring about smooth transition from elementary to high school education.

The school which provides the best educational program for pupils of this age is the one which meets the criterion of functionality. The four-year Middle School of grades 5,6,7, and 8 has, in recent years, become an accepted method of school organization throughout the nation.

D E S I G N R E Q U I R E M E N T S

The design and construction of Philadelphia's first middle school facility provides an opportunity to implement an outstanding educational program for pre-adolescent and early adolescent youths. To accommodate the present curriculum and yet allow for refinements and changes in the middle school program, it is imperative that the building not stand in the way of program change and educational progress. In fact, the building must be adaptable to evolving educational inovations.

A number of fundamental assumptions have been developed by the Consultants, both from meetings with the educational staff of the District and from analysis of current trends in educational and facility planning. These basic planning assumptions establish the "tone" of the functions which the middle school should serve and, in turn, have been used for developing the educational criteria that follow in subsequent sections.

1. *THE SCHOOL PLANT SHOULD BE DESIGNED TO ACCOMMODATE 1500 STUDENTS, WITH FUTURE EXPANSIBILITY.*

This new middle school should be planned for an initial capacity of 1500 students, consisting of about the same number of boys and girls. However, expansion of the building may be necessary at some unknown future date. Therefore, appropriate structural, mechanical, electrical, and architectural provision shall be made within budget limits to adapt to the possible addition of up to 25% increase in student capacity.

2. *THE BUILDING STRUCTURE MUST PROVIDE ADAPTABLE AND FLEXIBLE SPACE.*

It is anticipated that team teaching and various-sized instructional groups will become a more prevalent teaching method in the future. Therefore, flexibility within the total building facility must allow for the enlarging or decreasing of space to permit teachers to vary their instructional practice in any manner thought to produce the most effective learning. To provide the necessary flexibility of space demanded by the "evolving" middle school curriculum and instructional procedures, the building should be constructed so as to permit the rearrangement and alteration of spaces as required by educational changes, e.g. modular construction, movable partitions, and demountable walls.

3. *POSITIVE ENVIRONMENTAL CONTROL MUST BE ESTABLISHED.*

Since a proper environmental setting in schools is of the essence, a controlled environment is essential. This is to be achieved through the coordinated effort of the architects design team to produce soundly engineered control of thermal, light, and sonic factors. Consistent with this requirement, window areas shall be minimal in each instructional situation. This is in keeping with compact construction and promotes thermal economy, improves quality of illumination through elimination of a source of glare, improves ventilation through elimination of air pollutents, reduces glass breakage and requirements for window washing, enhances opportunities for exterior aesthetic

development, and provides important additions of wall space for chalkboard, tackboard, and for other educational needs. Appropriate glare control devices (shades, blinds, etc.) shall be included on the general construction contract. In view of the School District's policy of drastic reduction, although not complete elimination, in window areas, necessary safety features must be incorporated in design to include suitable knock-out panels for easy access from the exterior by firemen and hose lines, venting for smoke, and for emergency lighting.

4. THE BUILDING IS TO BE AIR CONDITIONED FOR YEAR-ROUND USE.

The primary objective in providing an optimum thermal environment is the control of overheating and maintenance throughout the year of minimum variation in temperature within a range of 70 degrees to 75 degrees F in classrooms. In order to attain the effectiveness of this temperature contribution to the thermal environment, the following additional criteria also pertain:

a) Design of structure so that interior mean radiant temperature approximates that of interior air temperature, or, as an alternative, counteraction or elimination of a heat loss of occupants to cold walls and windows.

b) Relative humidity of approximately 50% in cooling period.

c) Dilution of odors to an acceptable threshold by provision of adequate quantities of clean, fresh filtered outdoor air, supplemented, when necessary, by odor absorption provisions. Mechanical filtration of total air quantity.

d) Air movement continuous and sufficient for even distribution throughout working level and to minimize excessive temperature gradient from the floor to the ceiling.

e) Equipment noise level below acceptable maximum for type of space.

f) Simple and adequate control.

g) Rapid response of system to maintain thermal environment.

h) Safety of operation.

i) Harmony with the architectural and structural design and with visual and sonic environment.

NOTE: Technical criteria, inclusive of reports to be submitted during design development are contained in the TECHNICAL CRITERIA, GUIDES AND STANDARDS.

5. *PROPER ACOUSTICAL CONTROL IS REQUIRED IN THIS SCHOOL.*

Good hearing conditions are related to the function of each room or area shall be provided by application of appropriate design methods. Acoustical design shall include noise control at the source, attenuation of sound transmission where necessary, prevention of leakage of unacceptable high intensity and high pitched levels through partitions, and judicious location of facilities that produce such sound frequencies. Acoustical ceilings shall be provided generally for all learning areas, corridors, administrative suites, lunchrooms, and faculty workspaces.

6. *FLOOR COVERINGS MUST SATISFY NUMEROUS CONSIDERATIONS.*

The selection of floor material for each room or area must be appropriate to the use

to which it will be subjected and also consonant with the sonic environment to be attained. Appearance, durability, ease of maintenance, avoidance of floor glare, pleasing color contrast with other surfaces in the field of view, suitability to the area's function and use, safety, and owning and operating costs constitute the basic criteria. The use of carpeting in rooms that will be subjected to noise due to impact from movement of furniture or other equipment is considered essential, where, for example, desks and chairs would be rearranged as operable partitions between rooms are opened. All general purpose classrooms, the Instructional Materials Center, offices and counseling areas, and study carrel areas should be carpeted.

7. SCHOOLS SHOULD BE AESTHETICALLY ATTRACTIVE.

The internal and external appearance of a school should present a pleasing and inviting atmosphere. Such an environment can be created with the use of materials of various texture and color combinations. Colors should be coded according to the activity taking place and the type of atmosphere that is desired in a particular space; e.g. relaxing or stimulating. Selection of interior finishes as to color and texture, relationship to the furnishings that will be provided by the School District, and an appropriate and economic means of reducing glare from light sources and windows shall be given attention to the end of providing comfortable relationships. Interior finish schedule shall be included in the general contract plans and specifications. Special consideration should

be given to finishes used on walls in corridors, multi-purpose facilities and other "hard use areas" so as to provide ease of cleaning.

8. QUALITY OF LIGHT IS IMPORTANT.

The design of the lighting system for a classroom should include a detailed study of the normal tasks performed in the room, reflectances of all surfaces, special lighting effects required, normal sight lines, zoned control of lighting and color correction.

The higher footcandle levels recommended today require a much closer control of brightness from the lighting source and control of reflectances from wall, paper and desk tops. The wall and ceiling reflectances should be high to reduce luminaire brightness contrast. Suspended luminaires with large percentage of uplight will greatly reduce sharp contrasts between luminaire and ceiling, and at the same time reduce brightness and glare from bottom of luminaire.

The general illumination levels should be designed to comfortably handle the difficult seeing tasks and at the same time be capable of being switched to lower levels with even light distribution for audio-visual presentations. The chalkboard should have up to 20% reflectance with suitable supplementary vertical surface lighting.

The lighting of special use rooms, especially art and drafting rooms, should be carefully studied. The illumination levels with proper contrasts are very critical for both

applications with color rendition a very special problem in art rooms.

Classrooms having large areas of glass should use cool white lamps to achieve best balance with natural daylight. In windowless classrooms, the color of lamps should be coordinated with color schemes. Art Rooms should use color corrected warm white lamps with supplementary incandescent lighting to create highlights and shadows.

NOTE: Tables of illumination levels are contained in TECHNICAL CRITERIA, GUIDES AND STANDARDS.

9. THE DESIGN OF THE BUILDING MUST PROVIDE AREAS FOR INDIVIDUAL STUDY.

A renewed emphasis in education today is on concern for the individual student. Today's student in a modern school situation may move from a classroom or large group instructional area into an individualized study situation at any time during the school day. Both the school building and educational program must then allow the student a <u>time</u> and <u>place</u> to study/meditate/relax with printed/visual/audio materials that may be either directly related to a given lesson or generally broadening in their influence. Therefore, study carrels should be provided throughout the building, in departmental areas, grade level areas, and the Instructional Materials Center to give the student an opportunity to pursue any of a multitude of interests on his own.

10. *THE DESIGN OF ACADEMIC AREAS SHOULD INCORPORATE SPACE FOR SMALL GROUP INSTRUCTION.*

One type of instructional grouping involves 10-15 students in a seminar of small group situation. Space must be provided throughout the building for small groups to gather and discuss learning problems. Classrooms should be arranged so such groups can meet without disturbing other students; small seminar areas should be conveniently located in the departmental/grade level centers; and an area of the Instructional Materials Center should allow small seminar meetings.

11. *THE DESIGN OF ACADEMIC AREAS SHOULD INCORPORATE SPACE FOR MEDIUM/LARGE GROUP INSTRUCTION.*

Included in the variety of group instructional patterns is large group instruction for two or more classes. Teachers should have easy access to spaces that allow instructional groupings of 40-120 pupils or even more. Such spaces may be provided through the use of movable partitions that allow two or more classrooms to be joined into one large instructional space and by constructing movable mechanical partitions in the auditorium.

12. *AN INSTRUCTIONAL MATERIALS CENTER SHOULD BE PLANNED AS THE FOCAL POINT FOR ALL INSTRUCTIONAL SPACE IN THE SCHOOL.*

The concept of a "library" is changing to one that provides not only books, magazines, and other printed materials, but also a wide variety of other communication media in a

manner accessible to all students. Therefore, this area should be located central to the academic areas of the school. The space should serve as a center of activity that allows students to use books, tapes, projectors, and other educational resources according to individual student interest and capacity. This pursuit of learning should be possible in a small group instructional setting or at individual study carrels, some of which will be provided with facilities to use audio or video taped material. In addition, one area of the IMC serves as the center for electronic reception/storage/ distribution of electronic/video instructional materials for the school plant.

13. THE BUILDING SHOULD PROVIDE FOR ELECTRONIC EDUCATIONAL INSTRUCTION.

Modern technology is providing new instructional procedures both for group and individualized instruction. Classrooms should be arranged and have adequate electrical facilities to utilize various A-V hardware. The projective surface over the teaching station should be adaptable for higher overhead projection or motion picture projection. This means the projective surface must be adjustable to provide either a vertical or slanted surface to prevent Keystone effect. In addition, classrooms should be connected to the IMC in a manner that would permit utilization of other modern electronic media such as television, computers, and video tape recordings.

14. *CHALKBOARD AND TACKBOARD SHOULD BE PROVIDED AT EACH INSTRUCTIONAL AREA.*

Recent developments in materials used in school construction allow greater flexibility in the provision of wall writing surfaces and display areas. The use of floor to ceiling "pinwall" construction eliminates the requirement of tackboard, and the installation of writing-surfaced demountable partitions eliminates or reduces the need for chalkboards regardless of the use of these materials, minimum of 16 lineal feet of "front" writing surface should be provided in each classroom and a minimum of 8 lineal feet is desirable in small group/conference areas.

15. *THE AUDITORIUM SHOULD BE DIVISIBLE TO SERVE AS SEVERAL INSTRUCTIONAL AREAS.*

In order to increase utility and justify the expense, the space devoted to an auditorium must serve both as an audience/spectator area and also have the capacity for division into several instructional areas. The dividing partitions should be mechanically operated and provide an adequate sound barrier to permit medium and large group instruction. In addition, each instructional space must provide the following: a level area in front, of adequate size for teaching activities; chalkboard surfaces; provisions for A-V projection and for TV reception; adequate ventilation and air conditioning; adequate intensity, and quality of lighting; and exits.

16. *A FACULTY LOUNGE/DINING AREA SHOULD PROVIDE THE OPPORTUNITY FOR TEACHERS TO MEET INFORMALLY.*

A teacher lounge area allows a teacher to relax and converse with professional colleagues. The informal social atmosphere can assist in developing staff unity and morale. The space should be cheerfully decorated and contain a mixture of movable lounge furniture. In addition, this area serves as a space in which the teacher may obtain lunch or light refreshments.

17. *FACULTY WORK SPACE SHOULD BE PROVIDED FOR INDIVIDUAL TEACHER PREPARATION AND TEAM PLANNING.*

The custom in a departmentalized school of assigning a teacher to a classroom for the entire day, but scheduling classes in it for only part of the day, is an uneconomical use of space. Greater economy can be acheived by scheduling classes for the entire school day in a given classroom and supplying a separate office area for teachers. This arrangement recognizes that a teacher as a professional deserves an office.

The offices should be grouped according to disciplines, grade levels, or teams. Such office areas should generally be an open space with semi-privacy provided by furniture arrangement. This also allows accrual of benefits to the educational program through interaction and cooperation between teachers. In addition, such areas provide space for professional conferences and instructional preparation.

The office/workspace area should be easily accessible from all instructional spaces that relate to the specific grouping of teachers. The size of the space will vary depending on the combinations of disciplines and the number of instructors to be housed. In addition to the areas provided for instructors, space should be allowed for storage, conference area, work area, resource area, and an area for faculty aides.

18. SPACE MUST BE PROVIDED FOR THE ADMINISTRATIVE STAFF AND RELATED ACTIVITIES.

The nerve center of the middle school is the administrative suite. The activities within these spaces aid in supporting and coordinating the educational program within the school and maintain liaison between the school and the community. The area for the administration center should provide space for the principal, vice principals, and supporting clerical staff; counselors and secretarial aids; health services; roster room; discipline office; home/school coordinator and visiting district-level specialists; storage of supplies; and conference area.

19. PROVISIONS MUST BE MADE FOR ADEQUATE STORAGE SPACE FOR STAFF/SCHOOL MATERIALS.

Storage space must be provided for a variety of different materials. For adequate storage, the following facilities should be provided: (1) individual wardrobe and material storage in each teaching space; (2) individual departmental/grade level

storage rooms for supplies and books; (3) custodial storage closets for maintenance items and supplies; (4) supply storage at custodial receiving/storage/repair area; (5) storage room in administrative suite for clerical supplies; (6) built-in storage facilities for musical instruments in music area; (7) equipment storage in gymnasium, remedial gym, and P.E./Activity areas; (8) storage rooms for materials and supplies in the Practical Arts Center; (9) stagecraft storage in auditorium; (10) storage for adult and community use activities in spaces used for this purpose; and (11) storage and shelving in other educational areas; e.g., science, art, and Instructional Materials Center.

Resilient tile flooring should generally be provided for storage areas. Metal shelving of required garage should be included on the general construction contract.

20. CUSTODIAL, MAINTENANCE, AND RECEIVING MUST BE PROVIDED..

Provision must be made, in addition, to boiler and mechanical rooms, for a custodian's office, custodial storage, receiving and maintenance area, and a ready room for custodial employees, in accordance with the following delineation:

a) Custodian's Office - The office shall be desirably located with a vision area to the boiler room and have an area of approximately 75 sq. ft. The custodian's office need not be located at boiler room floor level.

b) Custodial Storage areas shall be provided at appropriate locations (perhaps four) on each floor, each approximately 70 sq. ft. in size, equipped with

a service sink and hot and cold water and appropriately depressed floor drains. Shelving for storage of cleaning and preserving material, racks for mops, brooms, and buckets, and room for a floor polisher shall be provided in these rooms.

c) Change Rooms - Change rooms for 12 custodial cleaning women, approximately a space 175 sq. ft. in size and for 6 men approximately 150 sq. ft. shall be provided. Toilets with shower and lavatory shall be located in each change room as well as lockers.

d) Receival, storage, repair area of approximately 1200 sq. ft. A service entrance with truck bed height receiving platform and easy access to a receiving (or temporary storage) room shall be located desirably close to the custodian's office and for ease in horizontal and vertical movement of supplies within the building. A main custodial supply storage room of approximately 500 sq. ft. and a main instructional storage room of approximately 500 sq. ft. shall be located centrally and not far from the custodian's office.

21. STUDENT SAFETY MUST BE CONSIDERED.

Consideration must be given for pupil safety throughout the school building. Pupils should be able to move about in the building without running any risks arising from faulty school design: e.g., doors opening into corridors, projecting materials. Areas that should be given special emphasis in safety design include: stairways, corridors, science areas, glass enclosed areas, the auditorium gymnasium, wet floor areas such as physical education, locker rooms, and the swimming pool.

22. STUDENT TRAFFIC PATTERNS, BOTH WITHIN AND OUTSIDE SCHOOL, SHOULD BE CAREFULLY PLANNED.

Student traffic flow must be considered so as to minimize overcrowding and student movement

difficulties. Two traffic movements must be considered: (1) to and from school, and (2) circulation within the school.

Daily traffic to and from school will involve children, teachers, and parents; vehicular delivery of supplies; and removal of waste. Pupils will arrive and depart in automobiles driven by adults, on bicycles, on foot, and in school district busses. There should be an auto loading and unloading area, bicycle racks in an accessible location, approach sidewalks to building, and bus loading and unloading area. Traffic patterns and facilities for each form of transportation should be separate as much as possible, and passengers and pedestrians should not cross wheeled transportation lines.

The architect shall study the traffic patterns in the general vicinity of the project and submit a study, at the time of submission of preliminary plans, in which he recommends any traffic aids, safety precautions, traffic lights and signs, movement of vehicles in and out of the parking area, movement of school buses, and movement of vehicles servicing the building.

Movement within the school is termed "circulation." Circulation patterns should permit teachers and students to move easily and quickly from one classroom setting to the following classroom without delay due to traffic congestion.

23. *FACULTY/VISITOR/BUS PARKING AREA MUST BE PROVIDED.*

Staff-visitor parking must be provided on the site. Off-street parking must be provided for faculty and other staff cars equal to 100 percent of staff personnel, plus at least 20 percent additional parking spaces for visitors.

24. *FUNCTIONAL SPACES OUTSIDE THE BUILDING SHOULD RELATE TO THE PROPER INTERIOR SCHOOL SPACES.*

The school plant should be related on the school site so exterior areas will be conveniently located to the appropriate school spaces. Exterior areas that need special consideration include physical education facilities, play fields, pupil access and egress routes, and service areas for supply delivery and disposal of waste materials. The architect should work closely with the School District's Division of Health and Physical Education for guidance in the design of internal and external physical education facilities.

25. *OPERATING ECONOMY REQUIRES BUILDING COMPACTNESS.*

Economy of construction, operation and maintenance result from building compactness. Therefore, design should provide for a minimum building perimeter that still permits a desirable educational program to function. Maintenance costs may be reduced in both mechanical operations and in custodial maintenance in an "under one roof" design.

26. *ADEQUATE UTILITY SERVICES MUST BE PROVIDED AND DISTRIBUTED TO ALL AREAS THROUGHOUT THE SCHOOL PLANT.*

The school must have the basic utility services of water, sewer, fuel supply, and electricity. In addition, the school must have the following systems throughout the building: (1) Lockable private house phone connected to the Administration Center; (2) a bell or tone system controlled in the administrative area; (3) a "master" clock system with clocks in each room; (4) a fire alarm system; (5) a one-way public address system with remote control in the administrative area; (6) adequate electrical outlets in each instructional space of the school; (7) public telephones in recessed areas near the administration center, gymnasium, swimming pool, and auditorium; (8) outside telephone lines accessible for principal, vice principals, kitchen manager, counselors, head custodian, physical education staff, music teachers, nurse, and each departmental office area; and (9) automatic temperature controls and adequate lighting in each instructional space.

27. *PLUMBING FIXTURES SHOULD BE PROVIDED THROUGHOUT THE SCHOOL FOR TOILET FACILITIES/DRINKING FOUNTAINS/HOT AND COLD WATER.*

Pupil toilet rooms must be located throughout the building. Boys' and girls' facilities should be located for convenience of access on each floor or area of the building. Wall and booth surfaces should be difficult to mark and easily washed. Rest rooms for girls

will serve as a "powder room" and should include an area with a full-length mirror. The number of pupil toilet facilities to be installed in the school building other than those in connection with the physical education and health facilities, shall be determined based on the following criteria:

Boys' Toilet	Girls' Toilets
WC - 1 per 75 boys or less	WC - 1 per 35 girls or less
Urinal - 1 per 30 boys or less	Lavatory - 1 per 50 girls or less
Lavatory - 1 per 50 boys or less	

In addition, a sanitary booth consisting of WC, lavatory, and a full length mirror shall be provided for all girls' toilet rooms.

Judicious consideration shall be given in the determination of the size and location of toilet rooms in satisfying the above criteria. Two toilets for each sex should be located on each floor with an even distribution of fixtures on each floor with some rooms to have access from the yard. All fixtures shall be wall-hung, except where the number of fixtures is very small and the cost of the pipe space would justify its elimination and installation of floor-counted fixtures.

Toilets shall be heated, effective mechanical ventilation provided, windows (if any) shall be translucent glass or other opaque material, and a stainless steel shelf be provided, not over the lavatory, but near it. The following heights, floor to rim, shall

be followed for the fixtures indicated:

Urinals, 20" (Spacing not less than 2'2" on centers.)

Water Closet, 15" (Stall size to be not less than 2'6"x4'6", with partitions to be either baked enamel metal, installed 1'0" from the floor, with the top of the partition 5'0" from the floor, or reinforced concrete masonry unit walls glaze painted.)

Lavatory, 31" (Spaced not less than 2'2" on centers.)

Paper holders, mirrors, soap dispensers, etc. shall be shown on the drawings for quantity and location and shall be noted as being provided by the School District and installed by the plumbing contractor. Toilet stall hardware shall be appropriately located to prohibit striking of the door by cubicle components. This applies to toilets of all types throughout the building.

All toilet room slabs, inclusive of the slab under pipe spaces, shall be depressed and provided with appropriate waterproofing membrane. All toilet room walls shall, where plumbing fixtures occur, be a minimum of 6" in thickness. All screen walls shall be a minimum of 6" thick. All finishes in toilet rooms shall be selected based on ease of maintenance, cleanliness, and neat appearance. A structural glaze tile base is preferred in all cases. Unpainted pipe space width of 2'0" to 2'6" is desired. Floor drain shall be provided.

Separate faculty toilet facilities should be provided on each floor for men and women.

Additional toilet and lavatory facilities should be constructed in the following areas: (1) health suite; (2) principal's office; (3) teachers' lounge; (4) food service; (5) receiving/storage/repair area; and (6) physical education area.

Recessed wall-hung chilled water drinking fountains should be distributed at convenient locations throughout the building with the fountain area to be finished for ease of maintenance and economy. The fountains should be located in the hallways and in areas of activity that promote water consumption, e.g., music, dining areas, and physical education. In addition, hot and cold running water should be provided in the following areas: receiving/storage/repair, exploratory technology, homemaking, food service area, art, physical education, and health suite. Gang drinking fountain facilities (but not chilled water) shall be provided at the rate of one spout per 70 pupil population and located in several appropriate points on the building exterior wall, with the bubblers at a height of 30" ground to rim.

28. DISPLAY AREAS SHOULD BE AVAILABLE AT SCHOOL ENTRANCE AND OTHER AREAS.

Display space for art work, notices of school activities and school awards should be located near each departmental/grade level center throughout the school plant. Part of the display space could be provided by display windows that permit easy replacement of background material and provide adequate lighting, security and safety.

In addition, picture moldings should be provided at least in the first floor hallways for hanging pictures.

29. INDIVIDUAL STUDENT LOCKERS SHOULD BE PROVIDED.

Provide minimum of 1200 lockers, one for each student, grades 6-8, for the storage of books, outer clothing, and other personal items. Arrangements should be made to install a minimum of 350 additional lockers if school enrollment exceeds 1500 pupils. A locker 6 inches wide, 60 inches high, and 18 inches deep would provide abundant space. Each locker should be equipped with a built-in combination lock that may be opened with a master key. Lockers should be interspersed in the hallways throughout the school so as to minimize traffic congestion.

Students in grade 5 should be provided an area in their grade center for books and clothing. Storage could be provided by means of individual classroom cloak areas with shelf space for books or personal items. Students should have tote-trays to carry books and supplies as they circulate in the grade center complex.

30. SCHOOLS TWO STORIES OR MORE MUST CONTAIN ELEVATORS.

To facilitate the movement of supplies and physically handicapped students, provisions must be made to provide elevators in school buildings that are two stories or more in height. The number of elevators should be based on the location of academic and

work areas that require the delivery of large quantities of supplies, the number of floors, and the square footage of floor space at the high levels.

31. STAIRWAYS AND CORRIDORS.

Location and design of stairways and corridors shall fully meet the requirements of safe and rapid circulation, with special consideration to be given the width of stairways if large groups must be dispersed from areas such as the cafeteria, auditorium, and gymnasium. Stairways shall satisfy pertinent laws; no classroom door shall be farther than 70' from any stairway, and open wells are not permitted. Non-slip treads, handrails, and banisters shall be provided. Headroom shall be adequate. Stair doors shall swing outward and panic bolts shall be provided on doors opening to the exterior. Attention shall be given to head clearance at stair landings and light fixtures shall be of a type and be located so as to avoid the possibility of tampering. Corridors shall not be used for instructional purposes but shall be used for circulation only.

32. FENCING SHOULD BE PROVIDED AS NECESSARY FOR THE SCHOOL PLANT.

Fencing shall be provided as necessary for the security and protection of pupils and school property. Wherever possible, structural provisions should be substituted for fencing. Appropriate gates shall be provided for access by fire apparatus to the building.

33. FIRE EXTINGUISHER PLACEMENT MUST BE PLANNED.

Niches shall be provided in corridors for 2 1/2 gallon pressurized water fire extinguishers, one per 2500 sq. ft. of floor space. Other code requirements per location of extinguishers to comply with Class A, B, and C fires shall be provided.

34. PLAY YARDS MUST BE PROVIDED FOR THIS SCHOOL.

The size and location of play yards, with respect to the building, must be planned for safety of location. The play yard should be paved and properly sloped to drains with grades not exceeding 2%. Steps and retaining walls should be avoided, and drinking fountains should be provided at appropriate locations. Yard bells and exterior fire alarm bells shall be located for easy hearing.

35. THE SCHOOL SITE MUST BE LANDSCAPED.

Appropriate landscaping shall be included in the development of the project. Existing healthy trees, where practicable, shall be retained. Planting shall be selected on the basis of minimum maintenance and grooming requirements, and must include plants that will thrive on a minimum of feedings and withstand abuse. Hose bibs for watering are required and sod should be used instead of seeding.

36. *AESTHETIC IMPROVEMENT OF THE BUILDING THROUGH THE USE OF DECORATIVE ART IS DESIRED.*

To enhance the unique character of each school, it is desired that some form of decorative art be included in this project. By definition, this requirement might be satisfied by inclusion of a mural, mosaic or fresco, or might include sculpture, monuments, stained glass, or bas relief. Procedures for the satisfaction of this requirement are detailed, and a description of these procedures is available from the Chief Engineer.

37. *SIMPLICITY AND ECONOMY OF DESIGN AND CONSTRUCTION IS IMPORTANT.*

Wherever reasonable and practicable, fixtures, hardware, and mechanical and electrical items should be so located or designed as to be proof against tampering, willfull or accidental damage. In the selection of materials and equipment and in the design of shapes and sizes, owning and operating costs shall be given full consideration to the end that the most appropriate construction, from the standpoint of amortised capital cost for operating and maintenance costs, attained.

38. *INSTALLED EQUIPMENT MUST BE SCHEDULED AND COORDINATED WITH STANDARD ITEMS.*

The architect shall include in the appropriate general, mechanical and/or electrical prime contracts, the furnishing and installation of the following installed equipment:

Auditorium seats
Fixed Laboratory equipment
Stage curtains and other auditorium curtains and/or drapes.

Gymnasium equipment
Steel shelving
Any installed metal office equipment
Food service equipment
Student lockers
Installed library equipment
Music equipment storage facilities

In order to assure appropriate compatibility between all <u>other furnishings</u> for the building (desks, chairs, bookcases, etc.), all of which are standard procurement items by the Purchasing Agent of the School District, the architect shall, in ample time prior to development of his interior finish schedule, confer with the Chief Engineer, Director of Equipment and Supplies, and the Purchasing Agent. This conference must be held in ample time to permit the School District's Purchasing Agent to procure the furnishings and install them in timely fashion with respect to construction contract completion.

39. GENERAL SUMMARY.

The primary criterion governing design is one which produces the optimum solution of the instructional and administrative requirements within budgetary limitations. A functional, pleasing, and economical project, both in first cost and in cost of operation and maintenance is desired. The building is to be compact in structure and related appropriately to the site,and surroundings. Design must be an integrated composition wherein the engineering is blended with the architecture to produce an optimum arrangement of space with visual sonic and thermal environment consistent with the needs of each area and conducive to the learning process.

40. ARCHITECTURAL VISITS.

The architect and his consulting team should visit and study the functions of several Philadelphia public schools in order to learn firsthand design problems for solution. Visits should also be made to several outstanding new middle schools built elsewhere in the United States in order to be appraised of modern solutions to educational problems. Subsequent to these visits the architect should discuss his findings and recommendations with the Director of School Planning and the Director of Architecture and Engineering.

S P A C E A L L O C A T I O N S

The School District of Philadelphia desires a middle school facility that will encourage an exploratory and comprehensive educational program for an initial enrollment of 1500 students. Such a curriculum requires a variety of spaces, each designed to permit several functions. Therefore, it is necessary to develop the following information for each space within the facility:

- The *TYPE* of space
- The *CAPACITY* of each space
- The approximate *SQUARE FOOTAGE* of each space
- A *DESCRIPTION* of the educational function of each space
- Schematic drawings that indicate *SPATIAL RELATIONSHIP* of each area to other spaces within the school plant.

This information should serve as a guide in establishing the relationships of the school plant with the educational program.

The Philadelphia School District has allocated 113 square feet per student for "intermediate schools." Based on a middle school enrollment of 1,500 students, the total gross square footage, the net square footage available for instructional space, and the net square footage available for non-instructional space would be computed as follows:

1500 students @ 113 sq. ft. per pupil	. . . .	170,000 total <u>gross</u> square feet
Structural, mechanical, service, and circulation area (25% gross)	. . . .	42,000 square feet*
Net Available Instructional Space (75% gross)	. . . .	126,000 square feet

*Non-instructional space includes corridors and passageways, toilet rooms, staircases, boiler rooms, custodial spaces, general storage, kitchen and storage, receiving and mechanical areas, and elevators.

The following sections indicate the proposed square footage for each instructional area. The total space presently allocated for the middle school is 126,000 square feet, which is less than the budgeted square footage allowed for instructional space in this school.

APPROXIMATE SPACE ALLOCATIONS

AREA		SQUARE FEET
A. ADMINISTRATION CENTER		*4,135*
1. General Office/Secretary/Reception	1,000	
2. Administration Center Storage	100	
3. Administrative Offices	475	
4. Discipline Area	250	
5. Conference Area	200	
6. Faculty Room	300	
7. Roster Room	150	
8. Guidance/Visiting Staff/Miscellaneous	1,090	
9. Health Suite	570	
B. GRADE CENTER: GRADE 5		*11,350*
1. Classrooms	10,200	
2. Grade Level Center	1,150	
C. INSTRUCTIONAL MATERIALS CENTER		*5,480*
1. Individual Study/Reference Area	3,000	
2. Individual Electronic Study Area	880	
3. Conference/Group Instruction Area	600	
4. Communication Center	600	
5. Staff Area	400	

APPROXIMATE SPACE ALLOCATIONS (continued)

AREA		SQUARE FEET
D. HUMANITIES		*18,310*
1. English	5,790	
2. Developmental Reading	1,700	
3. Social Studies	5,790	
4. Foreign Language	2,620	
5. Department Center	2,410	
E. MATHEMATICS		*6,990*
1. Classrooms	5,790	
2. Department Center	1,200	
F. SCIENCE		*8,365*
1. Classroom/Laboratory	6,300	
2. Central Storage/Preparation Area	600	
3. Live Area	125	
4. Department Area	990	
5. Individual Student Project Area	300	
6. Photography Laboratory	50	
G. FINE AND PERFORMING ARTS		*19,370*
1. Auditorium Complex	10,640	
2. Art	4,940	
3. Music	3,790	
H. PRACTICAL ARTS CENTER		*13,320*
1. Exploratory Technology	5,500	
2. Homemaking	4,500	
3. Commerce	2,000	
4. Department Center	1,320	

APPROXIMATE SPACE ALLOCATIONS (continued)

AREA		SQUARE FEET
I. DINING/ACTIVITY CENTER		*10,770*
1. Food Preparation/Service	4,410*	
2. Student Dining Area	5,000	
3. Boys' and Girls' Rest Room	-	
4. Faculty Dining/Lounge	1,200	
5. Token/Coin/Ticket Booth	70	
6. Student Store	300	
7. Student Government	-	
8. P.E./Activity Area	4,200	
9. Student Patio Area	-	
J. PHYSICAL EDUCATION		*27,910*
1. Main Gymnasium	11,100	
2. Remedial Gym	1,100	
3. P.E./Activity Area	- *	
4. Offices/Dressing Rooms	820	
5. Boys' Locker Area	2,660	
6. Girls' Locker Area	2,700	
7. Pool Area	9,530	
8. Field Area	-	
K. MAINTENANCE AND OPERATIONS		*2,590***
1. Receival/Storage/Repair Area	1,200	
2. Change Room (men)	150	
3. Change Room (women)	175	
4. Anteroom	150	
5. Custodian's Office	75	
6. Custodial Storage Areas	840	
TOTAL		*126,000*

* See Dining/Activity Area
** Not included in total of net instructional space

A. ADMINISTRATION CENTER

1. General Office/Secretary/Reception
2. Administrative Center Storage
3. Administrative Offices
4. Discipline Area
5. Conference Area
6. Faculty Room
7. Roster Room
8. Guidance/Visiting Staff/Miscellaneous
9. Health Suite

The Administration Center of a school serves as the administrative/communications hub wherein directions and coordination for all activities are given.

This area should be designed with the general office as the core of the administrative suite. Located around the general office area are the administrative offices, guidance offices, health center, faculty room, conference areas, and other offices that relate to the central administrative operation of a school. Separate access should be provided for students and adults, with those functions related to student programming (counseling, health, scheduling) most directly related to student circulation.

A. ADMINISTRATION CENTER

Space	Unit Cap.	No. Units	Total Net Area	Description of Functions and Special Considerations
1. GENERAL OFFICE/SECRETARY/RECEPTION AREA			1,000	
a. Public Reception	-	1	(200)	. Relate to main public entrance and the principal's office. . Provide comfortable and welcoming atmosphere for parents, students and visitors.
b. General Office/Secretary Area	6	1	(800)	. Direct access to administrative storage area, principal's office and vice-principals' offices. . This area provides open space for general clerical work, record recording, duplicating machines, and attendance functions. . Use counter to separate secretaries' desks from Public Reception area. Provide storage facilities in counter. . Controls access of students or visitors in principal's or vice-principals' offices. . Locate central P.A.,clock, bell system near principal's office.
2. ADMINISTRATIVE CENTER STORAGE AREA	-	1	100	Storage of clerical supplies for Administration Center with adjustable shelving in storage area. Direct access to General Office/Secretary/Public Reception Area.

A. *ADMINISTRATION CENTER* (continued)

Space	Unit Cap.	No. Units	Total Net Area	Description of Functions and Special Considerations
3. ADMINISTRATIVE OFFICES			475	
a. Principal's Office	6	1	(225)	. The principal's office is the center from which communication and coordination of the school originates. Relate to vice-principals' offices and conference room. . Immediate access to General Office/Reception area, public entrance via General Office area, and direct access to main traffic circulation. . Provide seating for 4 to 6 people in small group discussion or conferences. . Sound isolation from hallways and clerical areas required. . Provide built-in security safe for storage of valuable, money, etc.
b. Toilet	1	1	Not Included	. Private rest room for principal.
c. Vice-Principals' Offices (ea. @ 125 sq.ft.)	4	2	(250)	. Direct access to General Office/Reception area and to main traffic circulation with access through Public Reception area. . Relate to principal's office, conference room and Discipline Area. . Provide seating for 3 to 4 people in conference situation.

A. *ADMINISTRATION CENTER* (continued)

Space	Unit Cap.	No. Units	Total Net Area	Description of Functions and Special Considerations
4. DISCIPLINE AREA			250	Relate to/but separate from Guidance Area. Also relate to vice-principals' offices and to student record storage.
a. Discipline Office	4	1	(125)	. Large enough area for 4 to 5 pupils to confer with staff members. . Direct access to reception area with two entrances into office.
b. Reception Area	10	1	(125)	. Waiting room and clerical space for Discipline Office with direct access to main traffic pattern.
5. CONFERENCE AREA (divisible)	15	1	200	Relate to principal's office and vice-principals' offices with controlled public entrance via General Office/Reception area, additional entrance to area for faculty staff. Provide folding partition to divide area into two smaller conference spaces.
6. FACULTY AREA	60	1	300	Area that instructional staff reports in the morning and checks out in the afternoon with direct access to main traffic pattern and immediate access to General Office/Reception area.

A. *ADMINISTRATION CENTER* (continued)

Space	Unit Cap.	No. Units	Total Net Area	Description of Functions and Special Considerations
7. ROSTER ROOM	8	1	150	Space for 2 to 3 desks for instructors with roster duty. Pinwall construction for student and faculty scheduling charts.
8. GUIDANCE/VISITING STAFF/MISCELLANEOUS			1,090	General area for counselors and visiting district staff members. Relate to General Office and record storage. Aesthetically inviting to encourage all students to enter.
a. Reception Area/Staff Aides	10	1	(250)	. Staff aides should have desk area located between student entrance and offices of counselors, visiting staff and other staff personnel. . Area should provide chairs to 8 to 10 pupils. . Access from exterior student traffic. . Allow tackboard and shelving space for display of guidance material.
b. Counseling Offices (4 @ 80 sq.ft.)	3	4	(320)	. Each office should accommodate counselor and 2 to 3 counselees and should be provided with maximum privacy (visual and acoustical) to aid counselor and counselee in establishing rapport. . Ventilation, air conditioning, good quality of illumination, and pleasant visual environment are important in combating smallness of these rooms. . Direct access to Reception Area/ Staff Aids.

A. *ADMINISTRATION CENTER* (continued)

Space	Unit Cap.	No. Units	Total Net Area	Description of Functions and Special Considerations
8. GUIDANCE/VISITING STAFF/MISCELLANEOUS (continued)				
c. Conference/Testing Room (divisible)	15	1	(200)	. Utilized for small group counseling, small group testing, staff meetings, or parents/ counselors conferences. Relate to counseling offices and Health Suite. . Immediate access to reception area with visual control possible from Counselor Aides. . Movable partition to divide room into two separate conference rooms. Each area should be treated for reduction of sound transmittal.
d. Visiting Staff/Misc. Offices (ea. @ 80 sq.ft.)	3	2	(160)	. Space providing for visiting district-level personnel or for local professional staff. Immediate access to Reception Area/ Staff Aides.
e. Home/School Coordinator (ea. @ 80 sq.ft.)	3	2	(160)	. Coordinator assists in interpreting school to community. Immediate access to Reception Area/Staff Aides.
9. HEALTH SUITE			570	Access to General Office area with direct access by students from main traffic pattern. Relate to building exit for emergency cases and also relate to Guidance Conference/Testing Room
a. Reception/Waiting Area	8	1	(100)	. Direct access by students from hallway.

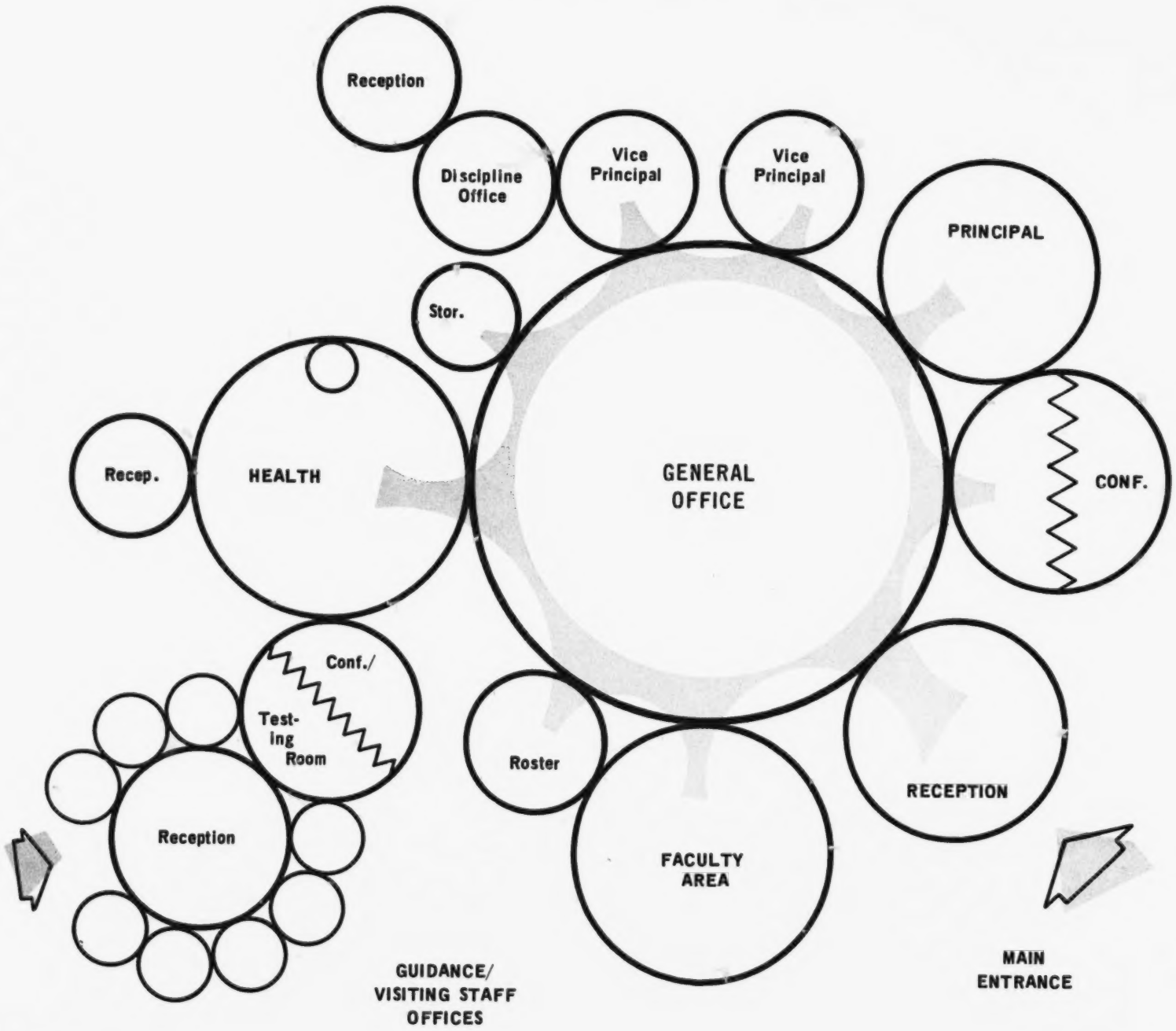
A. *ADMINISTRATION CENTER* (continued)

Space	Unit Cap.	No. Units	Total Net Area	Description of Functions and Special Considerations
9. HEALTH SUITE (continued)				
a. Reception/Waiting Area (continued)				. Visual barrier between Reception Area and Examination Area.
b. Health Office	2	1	(90)	. Office space for school nurse with storage for health records. Also used for counseling individual students. . Direct access into Examination Area and Cot Area.
c. Examination Area	5	1	(200)	. First aid and examination area of students with direct access to Health Office, Toilets and Reception/Waiting Area. . Cot Area a part of Examination Room with only visual space dividers. . Provide two screened cubicles for examinations. Also provide 22 lineal ft. for vision testing. . One portion of area to provide electricity and plumbing for portable dental chair used for dental exams and teeth cleaning. . Counter space with above and below counter lockable storage areas. Counter should contain sink with running water and access to counter electrical outlets.

A. *ADMINISTRATION CENTER* (continued)

Space	Unit Cap.	No. Units	Total Net Area	Description of Functions and Special Considerations
9. HEALTH SUITE (continued)				
d. Cot Areas (ea. @ 30 sq.ft.)	6	1	(180)	. Area of Examination Room zoned as cot space for sick pupils. Each cot space to have ceiling track and/or curtain screen for visual isolation. . Adjacent to toilet area.
e. Toilets (Boys' and Girls')	1	2	Not Included	. Lavatory and water closet with space to change and hang clothes. . Access to Cot Area.

ADMINISTRATION CENTER



B. GRADE CENTER: GRADE 5

1. Classrooms

2. Gravel Level Center

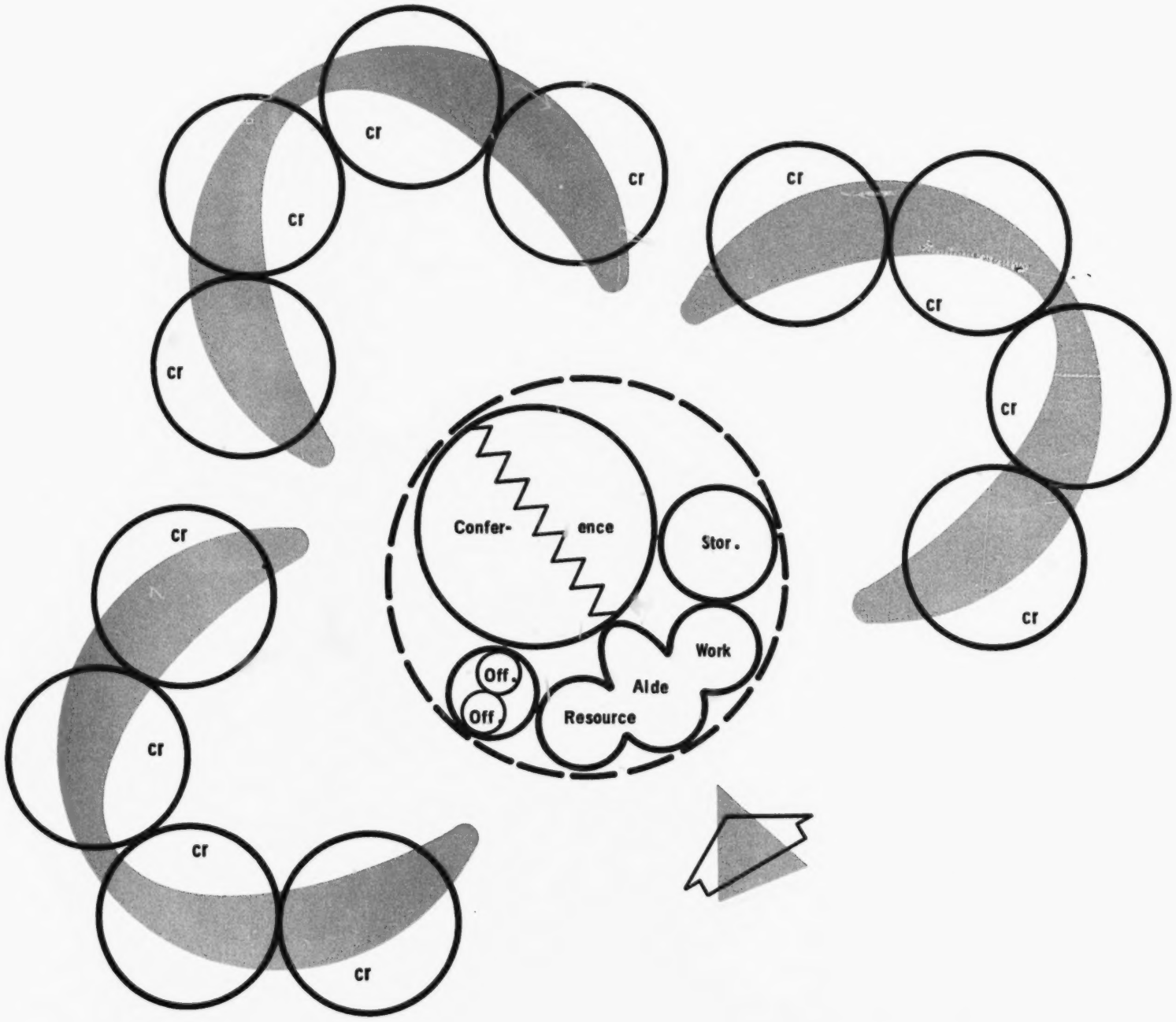
A student should basically remain in the same general school area during his first year in a middle school. This idea implies a "school within a school" concept. This area must be flexible to permit various student groupings to allow for variations in the composition of teaching teams and modification of instructional techniques.

B. GRADE CENTER: GRADE 5

Space	Unit Cap.	No. Units	Total Net Area	Description of Functions and Special Considerations
1. CLASSROOMS (ea. @ 850 sq.ft.)	25	12	10,200	One teaching area should "open" into the next teaching area. The only division of this area is with portable visual barriers and movable partitions. Pupils can move throughout complex freely without hinderance of solid walls. Classrooms should be clustered to permit team teaching. Each cluster should open into large space for large group instruction. Each classroom may be used for A-V or TV instruction. Immediate access to Grade Level Center. **Carpeting is desirable.**
2. GRADE LEVEL CENTER			1,150	Direct access to instructional area.
a. Aide/Reception Area	2	1	(150)	. Controls access to conference room, storage area, resource area, office area, and work area.
b. Resource Area	10	1	(150)	. Provide shelving for resource materials and books for student and teacher use. Area should contain several individual study carrels or tables.
c. Work Area	4	1	(150)	. Area for teachers to prepare instructional material. Relate to Conference Area.

B. GRADE CENTER: GRADE 5

Space	Unit Cap.	No. Units	Total Net Area	Description of Functions and Special Considerations
2. GRADE LEVEL CENTER (continued)				
d. Conference Area (divisible)	6	1	(250)	. Movable partitions divide area into two areas. Both areas have direct access to Aide/Reception Area. Relate to Work Area.
e. Office Area (ea. @ 75 sq.ft.)	2	2	(150)	. Direct access to Aide/Reception Area. To be used by Grade 5 counselor, speech therapist, visiting district-level professionals, etc.
f. Storage	-	1	(300)	. Storage of grade level supplies, books and equipment. Provide adjustable shelves for storage. . Controlled access through Aide/Reception Area.


cr
cr
cr
cr
cr
cr
cr
cr
cr
cr
cr
cr
Confer-
ence
Stor.
Work
Aide
Off.
Off.
Resource

C. INSTRUCTIONAL MATERIALS CENTER

1. Individual Study/Reference Area
2. Individual Electronic Study Area
3. Conference/Group Instruction Area
4. Communication Center
5. Staff Area

Existing school libraries indicate that such areas have played a satellite roll in relation to the educational program. However, this concept is changing and now the library is the "heart of the school" and is centrally located to other educational activities.

The roll of a library has developed into the much broader concept of an "Instructional Materials Center" that not only performs library functions but also has the capacity for electronic receival/storage/distribution of both audio and visual information. Therefore, such a comprehensive centrally located instructional materials center should contain space for books, magazines, individual and small group study, conference areas, and extensive electronic provisions to use the following media for learning purposes: television, video tape, computers, and individual electronic carrels.

C. INSTRUCTIONAL MATERIALS CENTER

Space	Unit Cap.	No. Units	Total Net Area	Description of Functions and Special Considerations
1. INDIVIDUAL STUDY/REFERENCE AREA	100	1	3,000	Main area of the IMC that provides books and periodicals for investigation, study, and leisure reading; individual study carrels, small group study tables, check-out area, card catalog, and indices. Single entry/egress area that serves as a control device and relates to charging desk. Entrance leads into a more informal area that changes into a study area with accompanying quietness. Furniture types should be mixed and include study carrels, lounge furniture and small group study/reference tables, to accommodate 4 or 6 pupils. Provide maximum height perimeter wall shelving and scattered 42 inch free-standing shelving. Maximum capacity of shelving for 12,000 books. Floor should be completely carpeted with wireless loop underneath carpet to carry audio programs to students using wireless inductance-type earphones.
2. INDIVIDUAL ELECTRONIC STUDY AREA	15	1	880	This area should flow into and be a portion of the Individual Study/Reference Area by means of a movable partition. Relate to Communication Center. Provide individual "wet" carrels with connections for television, audio receival, and usage of portable A-V equipment. Zone area for several computer aided instruction stations, with acoustical partitions.

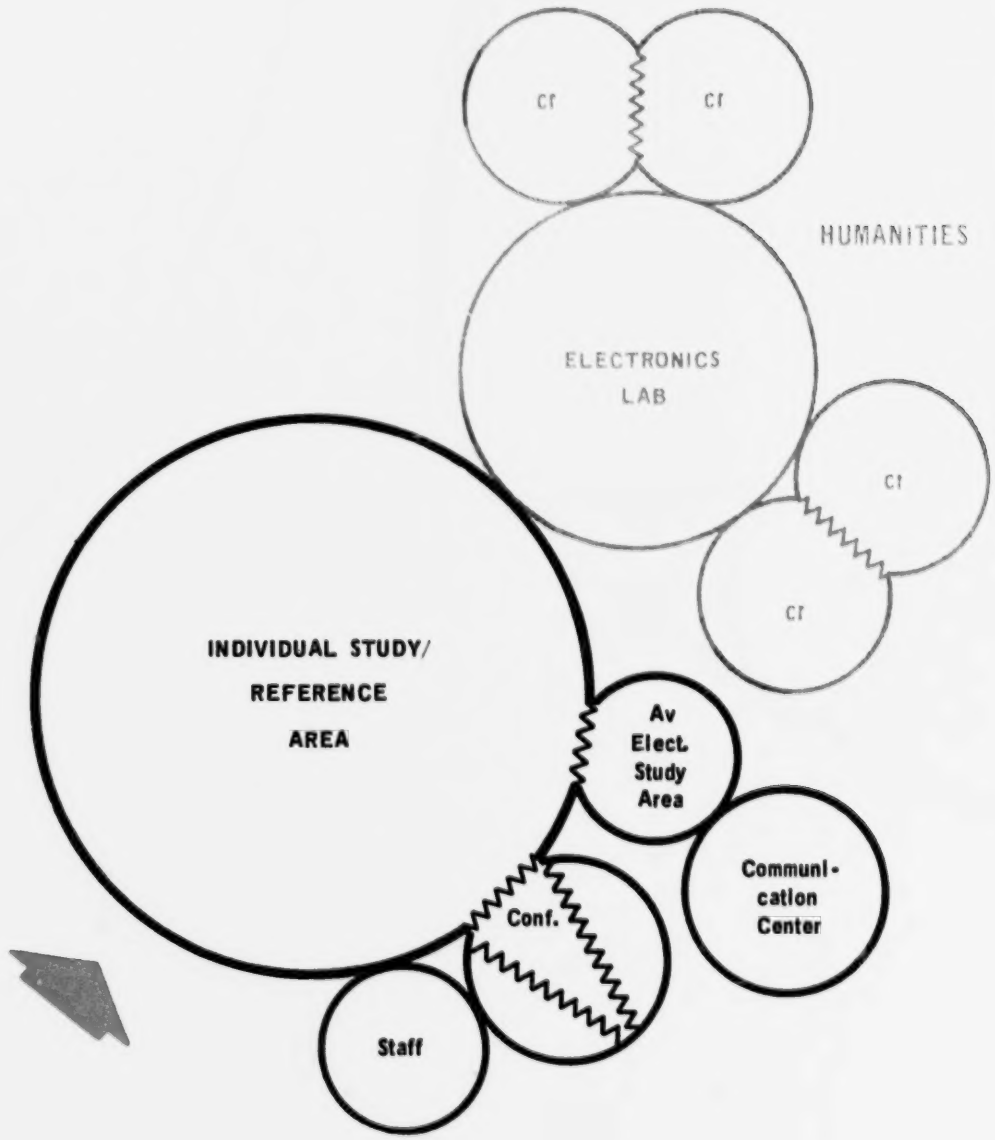
C. INSTRUCTIONAL MATERIALS CENTER (continued)

Space	Unit Cap.	No. Units	Total Net Area	Description of Functions and Special Considerations
3. CONFERENCE/GROUP INSTRUCTION AREA (divisible into 3 areas)	30	1	600	Space can be used as a classroom for library-use instruction and also be used as study area. Area should contain perimeter shelving for reference materials. Direct access that opens into Individual Study/ Reference Area by means of movable partitions. Relate to Communication Center. Conference area to be divisible by movable partitions into three separate conference rooms; each conference area to open into the Individual Study/Reference Area. Provide area for use of overhead projectors, movie projectors, video-tape recorders, and TV reception.
4. COMMUNICATION CENTER	-	-	600	Provide for:television receival, storage and distribution; A-V recording, storage and transmission; and capability to deliver audio-visual program to carrels or class-rooms via dial request. Provisions to produce or reproduce graphic instructional materials using diazo process and/or photographic process. Storage and circulation of A-V equipment to instruc-tional staff. Relate to Language Electronic Lab, Individual Electronic Study Area and Conference/Group Instruction Area.

C. INSTRUCTIONAL MATERIALS CENTER (continued)

Space	Unit Cap.	No. Units	Total Net Area	Description of Functions and Special Considerations
5. STAFF AREA			400	Direct access to Individual Study/Reference Area. Relate to Communication Center.
a. Work Room	2	1	(250)	. Space for two clerical (non-professional) people for unpacking and readying books for the Study/Reference Area.
b. Office	2	1	(150)	. Space for person in charge of IMC. This "Curriculum Media Coordinator" supervises library and communication functions.

MATHEMATICS



D. HUMANITIES

1. English
2. Developmental Reading
3. Social Studies
4. Foreign Language
5. Department Center

The Humanities Complex houses academic instruction for English and Social Studies, and should have priority of relationship to the IMC. The general theme of this area should be flexibility to accommodate organizational changes. The spaces will be similiar in terms of facilities required for the respective disciplines and can be assumed to be interchangeable. In addition, Foreign Language and Developmental Reading will be taught in the Humanities Complex. This area requires an electronic laboratory area with peripheral classrooms that is related closely to the IMC. The electronic laboratory should be available to the entire Humanities Complex and IMC.

The Humanities area, specifically the English and Social Studies classrooms, may be used in an alternate manner if the District desires. Alternative I indicates the use of these spaces as a grade level team-teaching area with a common Grade Level Center. Any grade or combination of grades 6-8 could be organized for the complex.

D. HUMANITIES

Space	Unit Cap.	No. Units	Total Net Area	Descripiton of Functions and Special Considerations
CLASSROOMS				*Basic classroom space. Provide television monitor, clock, PA system, house phone, and tilt-wall space over teacher station for overhead projection. Furnish each classroom with teachers' combination wardrobe and storage cabinet with adjustable shelves. Classrooms should allow expansion of teaching area into medium-group instruction through the use of movable partitions.* *Provide minimum of 16 lineal ft. chalkboard in each teaching area. Other wall space should be of pinwall construction. Zone area in each classroom for several computer aided instruction stations.*
1. ENGLISH			5,790	Relate to Developmental Reading Area; also relate English rooms in a clustered manner.
a. Classroom (ea. @ 850, expandable)	25	5	(4,250)	. Classrooms grouped in twos and threes with movable partitions. Space for 25-30 students in each room.
b. Classroom (ea. @ 770, expandable)	25	2	(1,540)	. Movable partition between rooms that permit medium-group instruction. Space for 25 students in each classroom.
2. DEVELOPMENTAL READING (@ 850 sq.ft., expandable)	25	2	1,700	Used for improvement of reading skills in a continuous manner. Emphasizes reading rates, vocabulary improvement, increased comprehension, and interest in reading. Relate rooms to Electronic Lab and IMC.

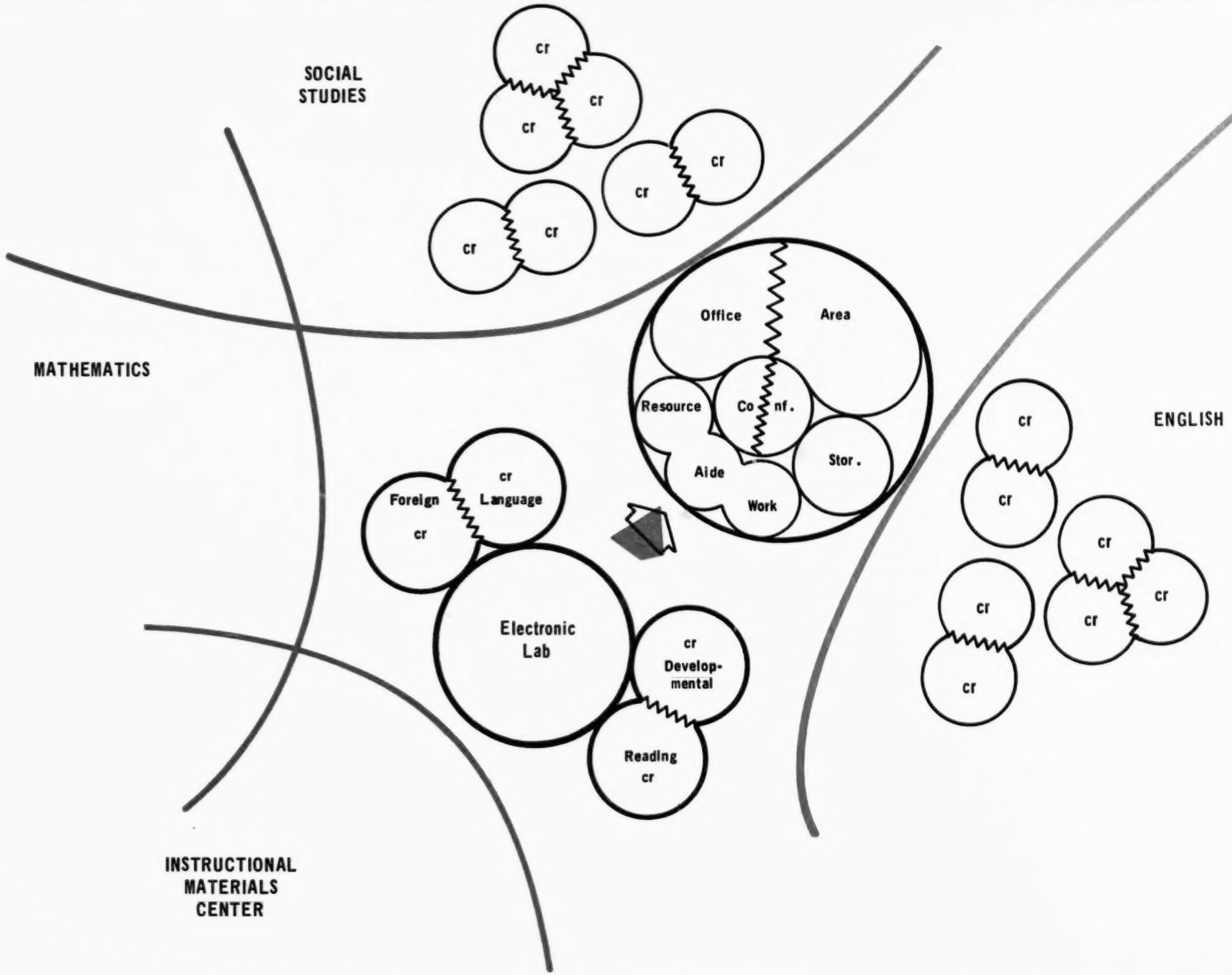
D. HUMANITIES (continued)

Space	Unit Cap.	No. Units	Total Net Area	Description of Functions and Special Considerations
2. DEVELOPMENTAL READING (continued)				Equip with numerous electrical outlets for reading machines. Utilize movable casework for division of room into several separate learning/study areas.
3. SOCIAL STUDIES			5,790	Cluster Social Studies classrooms.
a. Classroom (ea. @ 850, expandable)	25	5	(4,250)	. Classrooms grouped in twos or threes with movable partitions. Space for 25-30 students in each room.
b. Classroom (ea. @ 770, expandable)	25	2	(1,540)	. Movable partition between rooms that permits medium-group instruction. Space for 25 students.
4. FOREIGN LANGUAGE			2,620	Relate area closely to IMC with Electronic Lab incorporated into IMC area.
a. Classroom (expandable)	25	1	(770)	. General classroom for 25 students. Movable partition permits expansion into medium-group instruction area. . Direct access to Electronic Lab.
b. Classroom (expandable)	25	1	(850)	. General classroom for 25-30 students. Movable partition permits expansion into medium-group instruction area. . Direct access to Electronic Lab.

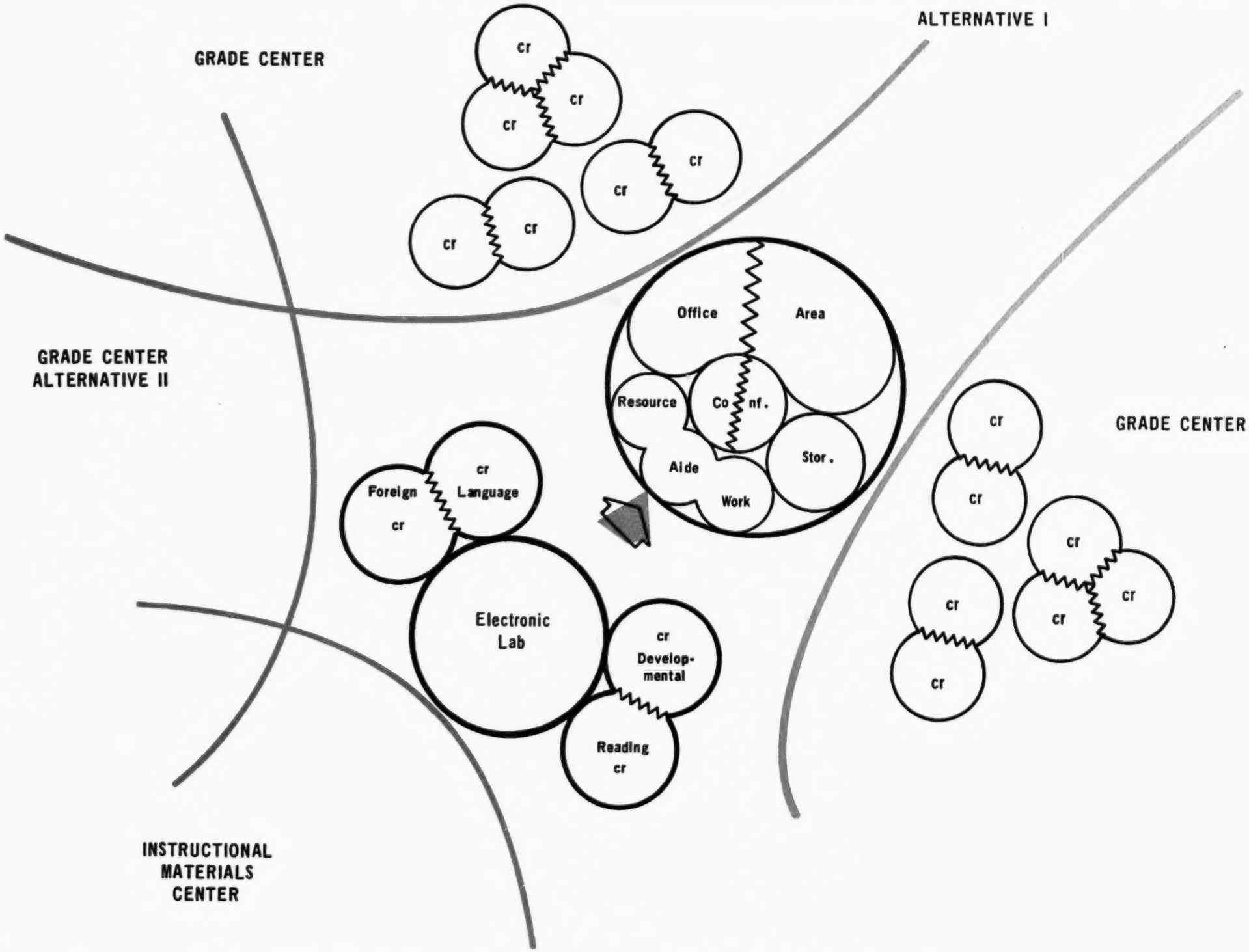
Space	Unit Cap.	No. Units	Total Net Area	Description of Functions and Special Considerations
4. FOREIGN LANGUAGE (continued)				
c. Electronic Laboratory (Language Lab)	30	1	(1,000)	. Direct access to Language Classrooms, IMC, and student circulation. . Each student station equipped with Level II (Listen-Respond) equipment. Five student stations equipped with Level III equipment. . Student stations tiered and oriented toward teacher console for maximum teacher/ pupil eye contact. These student stations should have free front vision and movable partitions for control of lateral vision; also should be convertible to flat surface desk with provisions for storing mike-earphones. . Teacher/instructor console should provide tape program sources, record program sources, individual and full student response system, as well as "all call" button and teacher monitoring facilities.
5. DEPARTMENT CENTER			2,410	Humanity Department area should be centrally located to English, Social Studies, Developmental Reading, and Foreign Language classrooms. Provides space for teacher offices, work area, conference space, and teacher aide.
a. Office Area	-	-	-	. Offices for each discipline should be divided with visual partitions or movable casework. Staff members should be teamed in small groups.

D. HUMANITIES

Space	Unit Cap.	No. Units	Total Net Area	Description of Functions and Special Considerations
5. DEPARTMENT CENTER (continued)				
a. Office Area (continued)				. All office areas should have direct access to Aide/Reception Area and Department Storage Area.
1) English/Reading (ea. @ 60 sq.ft.)	12	1	(720)	. Area for English and Developmental Reading teachers.
2) Social Studies (ea. @ 60 sq.ft.)	10	1	(600)	. Area for Social Studies teachers.
3) Foreign Language (ea. @ 60 sq.ft.)	4	1	(240)	. Area for Foreign Language teachers.
b. Department Storage Area	-	-	(200)	. Storage of departmental supplies and books. Area should contain adjustable metal shelving. Direct access from Aide/Reception Area.
c. Aide/Reception Area	-	-	(150)	. Controls access to Department Storage, Conference Area and Departmental Office Area.
d. Conference Area (divisible)	-	-	(200)	. Area available for departmental meetings, conferences, or team meetings. Immediate access to Aide/Reception Area and Office Area.
e. Work Area	4	1	(150)	. Area for preparation of teaching material "Flows" into Aide/Reception Area.
f. Resource Area	5	1	(150)	. Provide shelving for books and resource materials. Also provide small table and several study carrels for students.


SOCIAL STUDIES
cr
cr
cr
cr
cr
cr
cr
cr
MATHEMATICS
Office
Area
Resource
Conf.
Aide
Work
Stor.
ENGLISH
cr
cr
cr
cr
cr
cr
cr
Foreign
Language
cr
Electronic Lab
cr
Develop-
mental
Reading
cr
INSTRUCTIONAL MATERIALS CENTER

GRADE CENTER: Gr. 6-8



E. MATHEMATICS

1. Classrooms
2. Department Center

The Mathematics area is a complex of regular classrooms that contain facilities for audio visual instruction, teacher-led discussion, lecture and demonstration and the opportunity for pupils to work in individual mathematical projects.

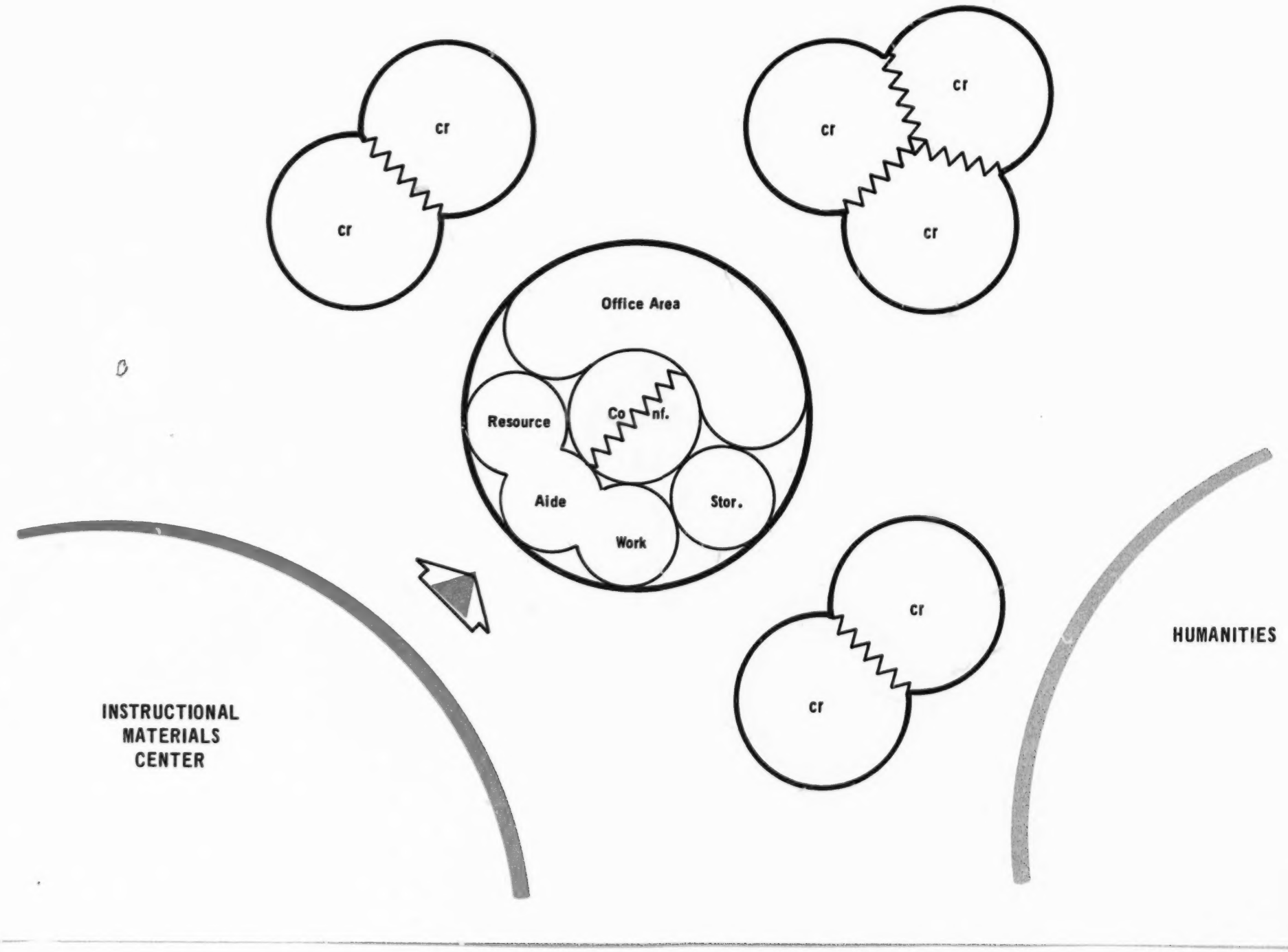
The Mathematics Complex may be used as a Grade Level Center. Alternative II indicates the use of the Mathematics Complex as a grade level team-teaching area with a Grade Level Center. Any grade organization of grades 6-8 could be scheduled for this complex.

E. MATHEMATICS

Space	Unit Cap.	No. Units	Total Net Area	Description of Functions and Special Considerations
1. MATHEMATICS CLASSROOMS			5,790	Basic classroom space. Provide television monitor, clock, PA system, house phone, and tilt-wall space over teacher station for overhead projection. Furnish each classroom with teacher combination wardrobe and storage cabinet with adjustable shelves. Relate classrooms in a clustered manner with proximity to Humanities Complex and IMC. Zone area in each classroom for computer aided instruction stations. Provide maximum front, rear and side chalkboard area with a minimum of 24 lineal ft. in each teaching area. Other wall space should be of pinwall construction.
a. Classroom (ea. @ 850, expandable)	25	5	(4,250)	. Space for 25 students. Classrooms grouped in twos and threes with movable partitions connecting rooms for medium-group instruction.
b. Classroom (ea. @ 770, expandable)	25	2	(1,540)	. Movable partitions between rooms that permits medium-group instruction. Space for 25 students.
2. DEPARTMENT CENTER			1,200	Located centrally to Mathematics Classrooms. Provides space for teacher offices, work area, conference space, resource area, and aide.
a. Aide/Reception Area	1	1	(100)	. Controls access to Conference Area, Storage Area, Office Area, Resource Area, and Work Area.

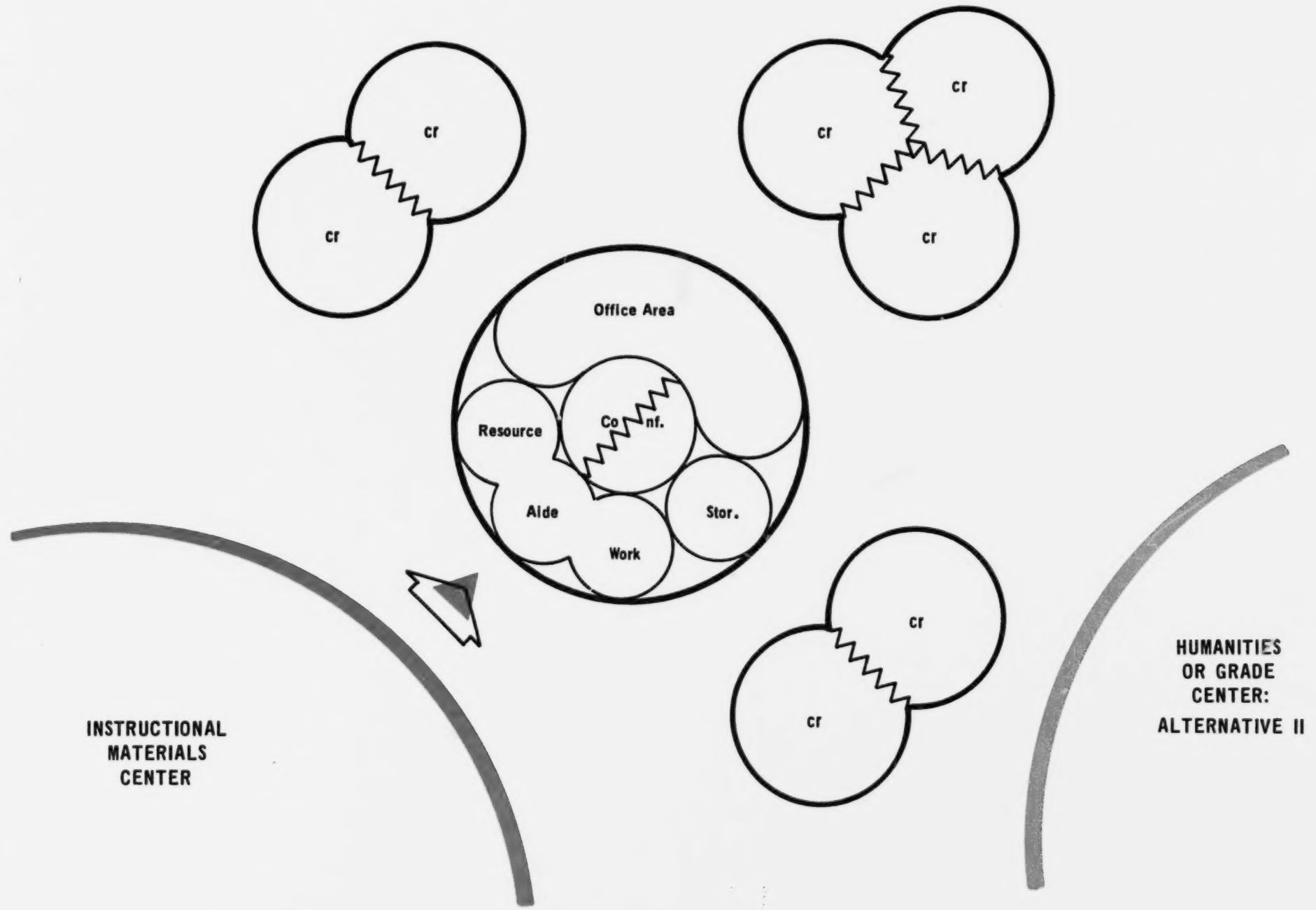
E. MATHEMATICS (continued)

Space	Unit Cap.	No. Units	Total Net Area	Description of Functions and Special Considerations
2. DEPARTMENT CENTER (continued)				
b. Work Area	4	1	(100)	. Area for preparation of teaching material. "Flows" into Aide/Reception Area.
c. Resource Area	5	1	(100)	. Provide shelving for books and resource materials. Also provide small table and several study carrels for student study and research.
d. Office Area (ea. @ 60 sq.ft.)	10	1	(600)	. Open office area for teacher in groups of two or three. Movable partitions or furniture provide divisibility and visual barrier.
e. Conference Area (divisible)	12	1	(200)	. Movable partition divides area into two separate conference areas. Provide each area with chalkboard and tackboard. Immediate access to Office Area.
f. Storage Area	-	1	(100)	. Storage of textbooks and clerical supplies. Provide adjustable shelving. Direct access to Aide/Reception Area.


cr
cr
cr
cr
cr
Office Area
Resource
Co
nf.
Aide
Work
Stor.
cr
cr
INSTRUCTIONAL
MATERIALS
CENTER
HUMANITIES

GRADE CENTER: Gr. 6-8

ALTERNATIVE II



F. SCIENCE

1. Classroom/Laboratory
2. Central Storage/Preparation Area
3. Live Area
4. Department Area
5. Individual Student Project Area
6. Photography Laboratory

The emphasis on science has increased appreciably since the first space craft orbited the earth less than one decade ago. In a short length of time, scientific progress and space research has imparted an impact in many areas of science. As a result, the student of today should start to develop an understanding of scientific concepts at an early age. The middle school should provide the opportunity to explore various scientific disciplines to the degree of competency of the student.

F. SCIENCE

Space	Unit Cap.	No. Units	Total Net Area	Description of Functions and Special Considerations
1. CLASSROOM/LABORATORY			6,300	Each science classroom should have direct access to a Central Storage/Preparation Area and Department Area. Relate all classrooms to an Individual Student Project Area. Special design considerations should be given to all lab areas to facilitate a combination of individual student research, general lab instruction and teacher-centered discussion/lecture. Provide teacher-demonstration table/desk at front of each science lab with gas, electrical and water connections. Equip all rooms with movable two-place student biology tables. Similar classrooms should be joined by movable walks for expansion into a two-class lab.
a. Biological Science Laboratories (2 @ 1050 sq.ft., expandable)	28	2	(2,100)	. Space for 28 students at two-place movable tables. Movable partition to expand into a two-class lab. . Provide perimeter shelving for display, cages, aquariums, terraiums, etc.
b. Earth Science Laboratories (2 @ 1050 sq.ft., expandable)	28	2	(2,100)	. Space for 28 students at two-place movable tables. Movable partition to expand areas into a two-class lab. . Provide perimeter shelving for display of rocks, space projects, conservation projects, etc.

F. *SCIENCE* (continued)

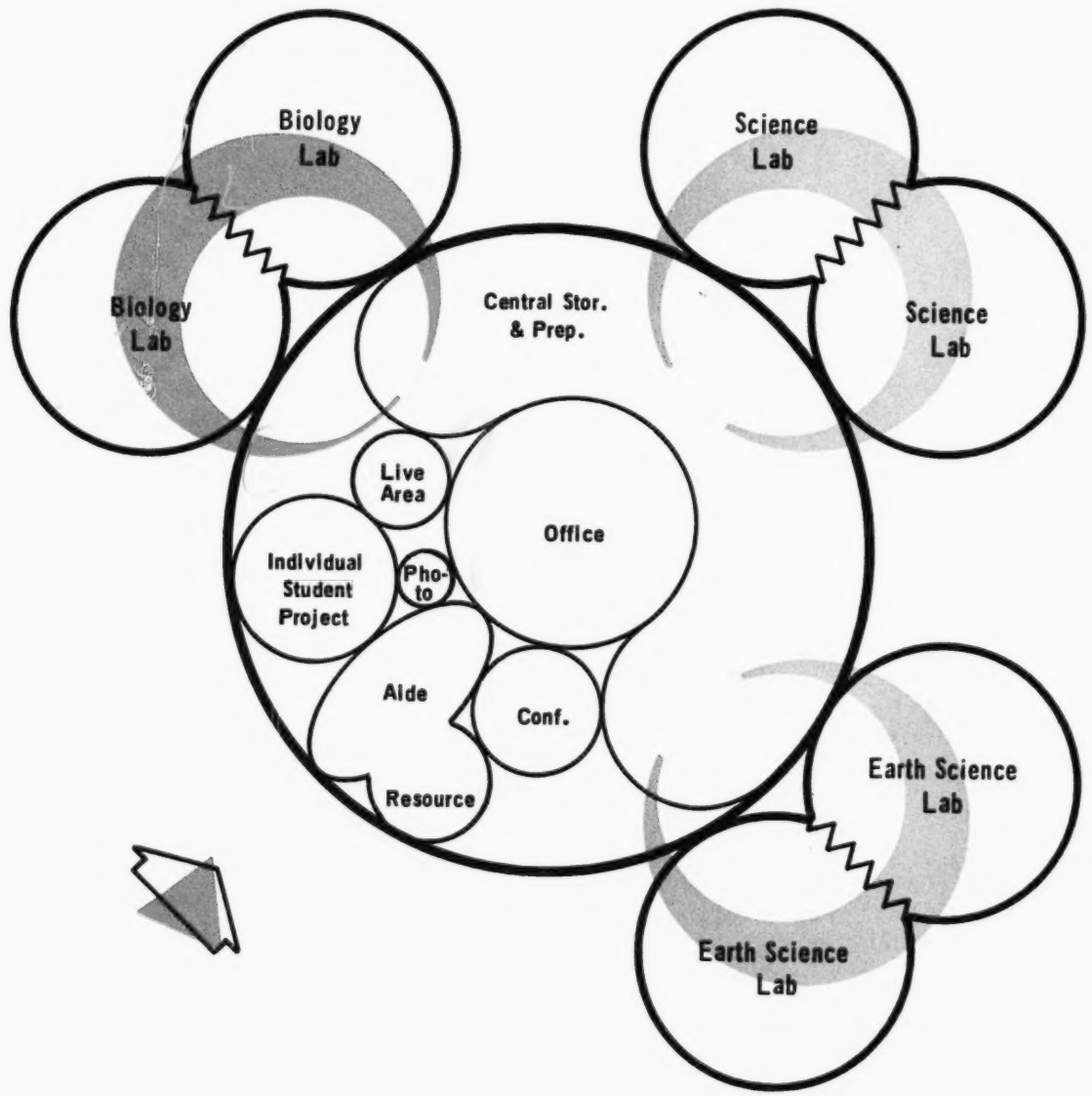
Space	Unit Cap.	No. Units	Total Net Area	Description of Functions and Special Considerations
1. CLASSROOM/LABORATORY (continued)				
c. Science Laboratories - General Purpose (2 @ 1050 sq.ft., expandable)	28	2	(2,100)	. Space for 28 students at two-place movable tables. Movable partition to expand into a two-class lab. . Provide perimeter shelving for display of various artifacts.
2. CENTRAL STORAGE/PREPARATION AREA	-	1	600	Immediate access into Department Area, each Science Classroom/Laboratory, and Live Area. Access to Individual Student Project Area. Provide storage facilities for maps, projects, racks, chemicals, mounted insects, mounted plant specimens, preserved animals, etc. Also provide area for chemical storage. Provide work/preparation areas for each instructor. Include running water, sink, gas, and electricity at each work/preparation station.
3. LIVE AREA			125	Area to contain for zoological and botanical life. Temperature and humidity control needed. Direct access to Central Storage/Preparation Area.
a. Animal House	-	1	(50)	. Area should contain movable shelves to hold all sizes of cages for animals and insects.

F. *SCIENCE* (continued)

Space	Unit Cap.	No. Units	Total Net Area	Description of Functions and Special Considerations
3. LIVE AREA (continued)				
b. Greenhouse	-	1	(75)	. Area should permit the raising of plants. Need to have watering facilities and direct sunlight.
4. DEPARTMENT AREA			990	Department area includes teacher office space, conference area, resource area, and space for aide.
a. Office Area (ea. @ 60 sq.ft.)	9	1	(540)	. Open space that serves as an office area for instructional staff. Direct access to Central Storage/Preparation Area, Conference Area, and Individual Student Project Area.
b. Aide/Reception Area	-	1	(150)	. Controls access into Central Storage/ Preparation Area, Conference Area, Resource Area, Photography Lab, and Offices, with direct access to main traffic circulation. . Contains duplicating equipment for preparation of instructional materials.
c. Conference Area	8	1	(150)	. Direct access from Office Area and Aide/ Reception Area.
d. Resource Area	-	1	(150)	. Area for department reference material and space for individual study carrels with immediate access through Aide/Reception Area.

F. SCIENCE (continued)

Space	Unit Cap.	No. Units	Total Net Area	Description of Functions and Special Considerations
5. INDIVIDUAL STUDENT PROJECT AREA	10	1	300	Area for selected individual students to initiate and carry on longitudinal science projects. Provide electricity outlets on basis of one per two students, one source of water, and counter space/shelf storage for each student. Relate to Science Classroom/Laboratory with direct access to Central Storage/Preparation Area.
6. PHOTOGRAPHY LABORATORY	2	1	50	Area to develop and process film. Access limited to selected pupils and faculty members. Access to Individual Student Project Area and Central Storage/Preparation Area.


Biology Lab
Biology Lab
Central Stor. & Prep.
Science Lab
Science Lab
Live Area
Office
Individual Student Project
Pho-to
Aide
Conf.
Resource
Earth Science Lab
Earth Science Lab

G. FINE AND PERFORMING ARTS

1. Auditorium Complex
2. Art
3. Music

The new middle school program should provide an introduction to the Fine Arts in a manner enabling student involvement and the beginning appreciation of music and art.

The Fine and Performing Arts Complex should be one of the grouped arrangements in a middle school plant. Such a complex will include an extensive multi-use auditorium that will be available for programs, assemblies, and large group instruction. It must be conveniently located for community use.

Art serves as an integral part of the middle school program and will be related to other phases of learning. Students should be introduced to art and the creativities and enjoyment that may evolve from the pursuits of painting, drawing, sketching, and other arts and crafts forms.

With increasing amounts of leisure time, music will assume a more significant role in the social life of future generations. Facilities for vocal and instrumental music in a middle school are designed to introduce a basic music program to students.

G. FINE AND PERFORMING ARTS

Space	Unit Cap.	No. Units	Total Net Area	Description of Functions and Special Considerations
1. AUDITORIUM COMPLEX			10,640	Large group assembly area for student assemblies, large group meetings, or community programs. Relate to Administration Center.
a. Lecture/Auditorium (divisible into 3 spaces - 1 @ 450 capacity 2 @ 150 capacity)	750	1	8,000	. Area divisible into several varying-sized areas that may be used for medium-group instruction or large-group instruction. Each space to contain capacity for A-V service, bracket-mounted TV receivers, and flat floor surface for teaching station. Each area must be individual access and provide acoustics, air circulation, thermal, artificial lighting and sight lines that permit a teaching situation similar to a classroom. Provide sloped fixed seating. Stagger seating for visibility. . All areas should relate and be accessible to exterior entrance-exit. Also relate to men's and women's toilets. . No orchestra pit needed but allow several feet between stage and first row of seats. This area should be equipped as a teaching station for large-group instruction. Provide projection area near back of Lecture/Auditorium. . Provisions to close off corridor to remaining portions of building when auditorium used for evening and summer usage.

G. FINE AND PERFORMING ARTS (continued)

Space	Unit Cap.	No. Units	Total Net Area	Description of Functions and Special Considerations
1. AUDITORIUM COMPLEX (continued)				
a. Lecture/Auditorium (continued)				. Hallways leading to main entrance of Lecture/Auditorium must be wider to handle heavier traffic load. . Direct access to backstage area without crossing stage aprons.
b. Ticket Booth	2	1	(40)	. Provide booth with window related to corridor near main exterior approach to auditorium.
c. Control Area	3	1	(100)	. Provision for A-V projection and control with space for technicians to operate lights and audio for stage.
d. Stage/Wings	-	1	(2,000)	. Design minimal facilities presidium. Provide overhead lights and audio control system. Provide minimum 6 ft.clearance between front of stage and stage curtain. . Provide duplex electrical outlets approximately four feet apart at front of stage apron. . Direct access to Art Department, Music Department, Stagecraft Area; with double door exits for moving props.

Space	Unit Cap.	No. Units	Total Net Area	Description of Functions and Special Considerations
1. AUDITORIUM COMPLEX (continued)				
e. Stagecraft Area	-	-	(500)	. Space to prepare and store materials for musical and dramatic productions. Direct access to Stage/Wings with large double door for moving props. Relate to art facilities.
2. ART			4,940	Activities will include two and three dimensional work that includes instruction in drawing, painting, sculpture, crafts, ceramics, and related activities. Relate to Auditorium Complex and Stagecraft Area.
A. Art Laboratories (ea. @ 1400 sq.ft.)	25	3	(4,200)	. Equip with flexible furniture for small group work. Also provide adequate artificial lighting. Natural lighting not required. . Provision for abundance tackboard space with pinwall construction. . Provide perimeter counter sinks with hot and cold water; drains should include clay traps. . Provide art storage cabinets in classroom that includes units capable of storing paper stock up to 36 inches wide; also provision for individual storage facilities for each student, e.g., tote tray storage.

Space	Unit Cap.	No. Units	Total Net Area	Description of Functions and Special Considerations
2. ART (continued)				
a. Art Laboratories (continued)				. All labs have access to following centralized areas: Art Storage Area, Wet Room, Kiln Room, Project Storage Area, and Office Area. . Relate to outside exit and outside art patio area.
b. Art Storage Area	-	-	(200)	. Department storage for art supplies and equipment. Direct access to all Art Labs.
c. Project Storage	-	-	(100)	. Storage of painting, sculpture, ceramics projects of students. Provide movable storage facilities. . Direct access to all Art Labs.
d. Kiln Room	-	-	(100)	. Provision for 220/208 volts for kiln and also provide washable floor. . Direct access to all Art Labs.
e. "Wet" Room	-	-	(100)	. Provide controllable humidity to prevent clay drying. Direct access to all Art Labs.
f. Office Area (ea. @ 60 sq.ft.)	4	1	(240)	. Office space for art instructors with direct access to all Art Labs and student circulation.

G. FINE AND PERFORMING ARTS (continued)

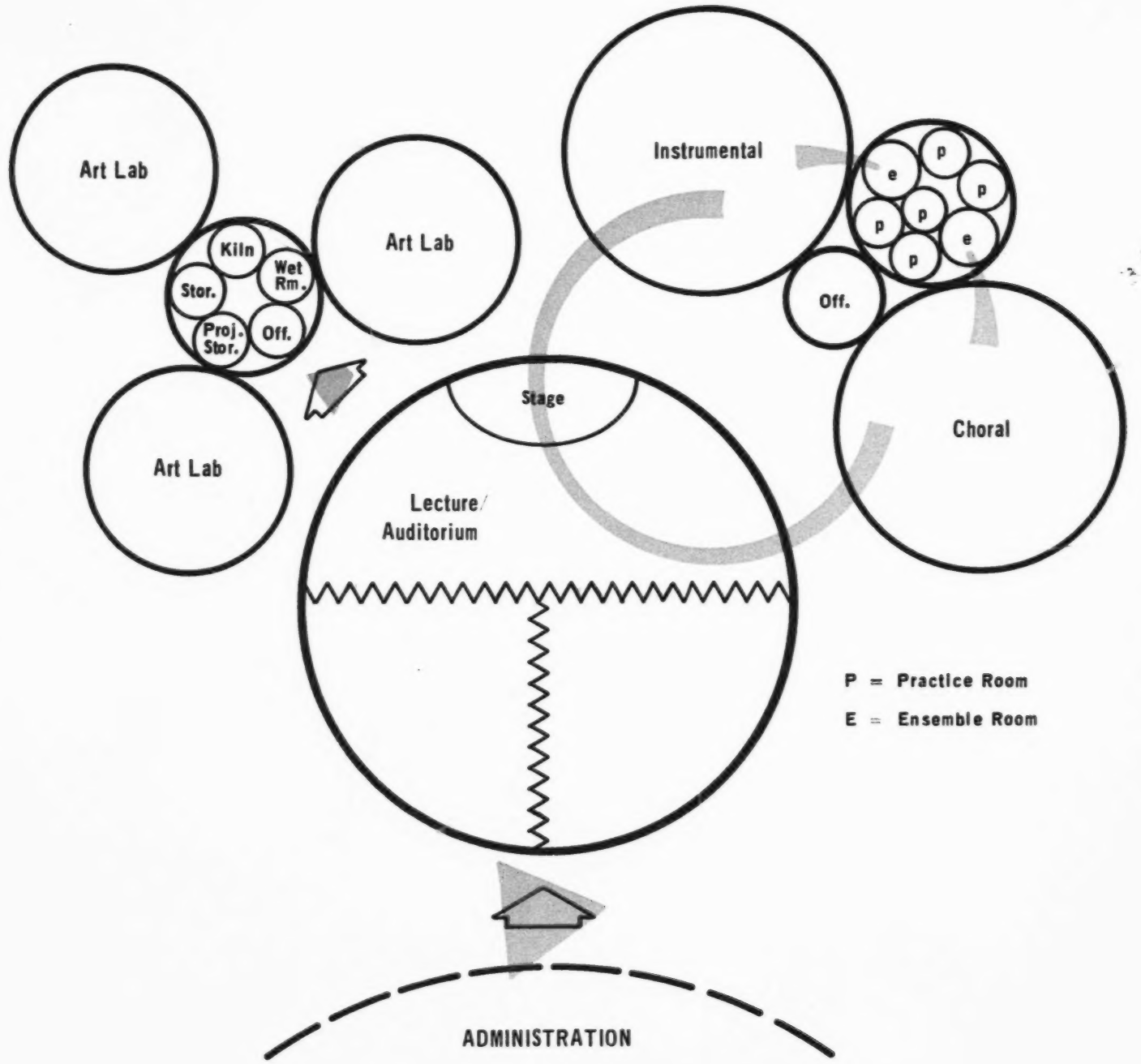
Space	Unit Cap.	No. Units	Total Net Area	Description of Functions and Special Considerations
3. MUSIC			3,790	Area for instruction, practice and rehearsal of vocal/instrumental music. Provide sound-proofing and acoustical treatment throughout music complex. Relate to Stage/Wings of Auditorium Complex.
a. Choral Rehearsal Hall	100	1	(1,400)	. Rehearsal and instruction of vocal music to accommodate chorus of 100. Access through double doors with supervision from music office area. Direct access to one Ensemble/Make-up Area. . Provide radial tiered platform with treads not less than 30 inches and riser height not less than 6 inches; ceiling height a minimum of 16 ft., electrical outlets on lowest riser, with non-parallel walls or other material to form non-parallel walls, e.g., movable sound baffles. . Provide space for piano at front of hall.
b. Instrumental Rehearsal Hall	75	1	(1,700)	. Instruction and rehearsal of instrumental music for band of 75 pieces. Access through double doors with supervision from music office area. Relate to individual practice rooms. Direct access to one Ensemble/Make-up Room. . Provide space for piano at front of hall. . Provision for lavatory and drinking fountain.

G. FINE AND PERFORMING ARTS (continued)

Space	Unit Cap.	No. Units	Total Net Area	Description of Functions and Special Considerations
3. MUSIC (continued)				
b. Instrumental Rehearsal Hall (continued)				. Provide radial tiered platform with treads not less than 5 ft. except top level which should not be less than 6 ft.; riser height not less than 6 inches; ceiling height a minimum of 16 ft; electrical outlets on lowest riser; and non-parallel wall or movable sound baffles that would create non-parallel walls. . Provide lockable perimeter storage for 100 instruments with one foot and three foot deep cabinets with adjustable shelves.
c. Music Offices/Library	4	1	(240)	. Office and conference area for music teachers with direct access and visual control of Choral Hall, Instrumental Hall and Practice Rooms. . Provide for storage, sorting and arrangement of music.
d. Practice Rooms	-	-	-	. Practice and rehearsal for individuals and small instrumental and vocal groups. Relate to music offices. . Provice acoustical treatment, non-parallel walls, and flat floors.

G. FINE AND PERFORMING ARTS (continued)

Space	Unit Cap.	No. Units	Total Net Area	Description of Functions and Special Considerations
3. MUSIC (continued)				
d. Practice Rooms (continued)				
1) Individual Practice Rooms (ea. @ 50 sq.ft.)	1	5	(250)	. Practice room for individuals. Access by music offices and through Choral or Instrumental Halls.
2) Ensemble/Make-up Rooms	6	2	(200)	. Practice room for small ensembles. Direct access for one ensemble room through Choral Hall and for second ensemble room through Instrumental Hall. . Provide lavatory and mirror to double as "make-up" area for plays, concerts, etc.


Art Lab
Art Lab
Kiln
Wet Rm.
Stor.
Proj. Stor.
Off.
Art Lab
Instrumental
e
p
p
p
p
p
e
p
Off.
Stage
Choral
Lecture/ Auditorium
P = Practice Room
E = Ensemble Room
ADMINISTRATION

H. PRACTICAL ARTS CENTER

1. Exploratory Technology
2. Homemaking
3. Commerce
4. Department Center

The demands for individual competence in technical vocations are compounding in our present society. This indicates a need for carefully planned exploratory Practical Arts curriculum in the middle school that assures introductory skill-level experiences for all students in the areas of Exploratory Technology (IA), Commerce, and Homemaking. Also the middle school should permit some individual technical skill development that will lead into a high school vocational curriculum that specializes and refines a particular skill.

H. PRACTICE ARTS CENTER

Space	Unit Cap.	No. Units	Total Net Area	Description of Functions and Special Considerations
1. EXPLORATORY TECHNOLOGY (IA)			5,500	Labs should provide introduction to basic technical skills. Much time will be spent in activities of an exploratory nature. Instructional areas should be identified in each lab. Also an area should be designated as a "planning" area in each lab. Relate labs to Homemaking and Commerce Labs with direct access to Department Center. Also relate labs to outside exit for ease in supply delivery. Provide lavatories in each lab.
a. Construction Laboratory (Project Storage & Tool Storage included)	28	1	(1,700)	. Activities include work with wood, masonry, brick, electrical wiring, painting, plumbing, and paper hanging. Such activities are introduction to trades and skills involved in "construction." . Provide individual perimeter work in addition to 4-place group work areas. . Provision for masonry and plumbing zones with running water and drains. Equip with lockable perimeter cabinets that permit project storage. Relate to Supply/Storage area. . Tool storage will be provided by wall-hung storage facilities and movable tool carts.
1) Construction Lab Supply/ Storage	-	1	(150)	. Relate storage to lab entrance for ease of material delivery. Doors to storage should be large enough to permit movement of "long" material.

Space	Unit Cap.	No. Units	Total Net Area	Description of Functions and Special Considerations
1. EXPLORATORY TECHNOLOGY (continued)				
a. Construction Laboratory (continued)				
1) Construction Lab Supply/Storage (continued)				. Provide varying storage facilies, e.g., horizontal storage of wood; movable shelves; and bins.Allow area to store movable tool carts. . Direct access into Construction Lab.
b. Manufacturing Laboratory (Project Storage & Tool Storage included)	28	1	(1,700)	. Activities include exploratory work with metals, plastics, welding, machines, printing, and drawing. . Provide individual perimeter work stations in addition to 4-place group work areas. Equip with lockable perimeter cabinets that permit project storage. . Provide wall-hung tool storage and space for movable tool carts. Tool carts may be stored in Supply/Storage area.
1) Supply/Storage	-	1	(100)	. Provide doors wide enough to permit ease of supply movement and storing of tool carts. Equip with movable shelving for storage of supplies. . Direct access to Manufacturing Lab.

H. PRACTICAL ARTS CENTER (continued)

Space	Unit Cap.	No. Units	Total Net Area	Description of Functions and Special Considerations
1. EXPLORATORY TECHNOLOGY (continued)				
c. Power/Transportation/Electronic Laboratory	28	1	(1,700)	. Allows exploratory work in the areas of electricity, instrumentation, radio, television, air-conditioning, and engines. . Provide perimeter work area for individuals in addition to 4-place small group work spaces. . Provisions for wall-hung tool storage and space for movable tool carts.
1) Supply/Storage	-	1	(150)	. Relate to lab entrance with doors wide enough for ease of supply movement and storing of tool carts. Direct access into Power Laboratory. . Provide heavy adjustable perimeter shelving for large items, e.g., electronic equipment and motor parts.
2. HOMEMAKING			4,500	Introduction and exploratory experiences related to general homemaking activities. Relate to exterior exit for delivery.
a. Foods Related Laboratory	28	1	(1,500)	. Seven 4-station kitchen units with formica counter tops at appropriate height for girls 10-13 years old; above-counter electrical outlets, wall/ceiling-hung cupboards; double sink, built-in garbage disposal unit and cooking ranges (gas and electric).

Space	Unit Cap.	No. Units	Total Net Area	Description of Functions and Special Considerations
2. HOMEMAKING (continued)				
a. Foods Related Laboratory (continued)				. Provide for following electrical equipment in accessible part of room: one washer, one drier, one dishwasher, and one large refrigerator. . Zone space so teaching station relates to entire area for demonstration purposes. Ceiling-mounted mirror suspended over teacher demonstration area for pupil observation of instructional procedures. . Direct access to Family Living Area and Department Center. . Storage of canned and "dry" cooking items should be in area that can be locked but easily accessible for distribution to cooking stations. Provide tote-tray storage.
b. Clothing Related Laboratory	28	1	(1,500)	. Provide seven 4'x 8' tables of a height convenient to 10-13 year old girls, with enclosed tote-tray storage. Additional tote-tray storage to be provided if table bases have insufficient capacity. . Furnish 14 sewing stations with electrical power available to each. . Zone a grooming area with counter, 3-way mirror, electrical outlets, special lighting provisions, and counter/top sink and water. Also zone an area for ironing boards and electrical outlets for irons near grooming area.

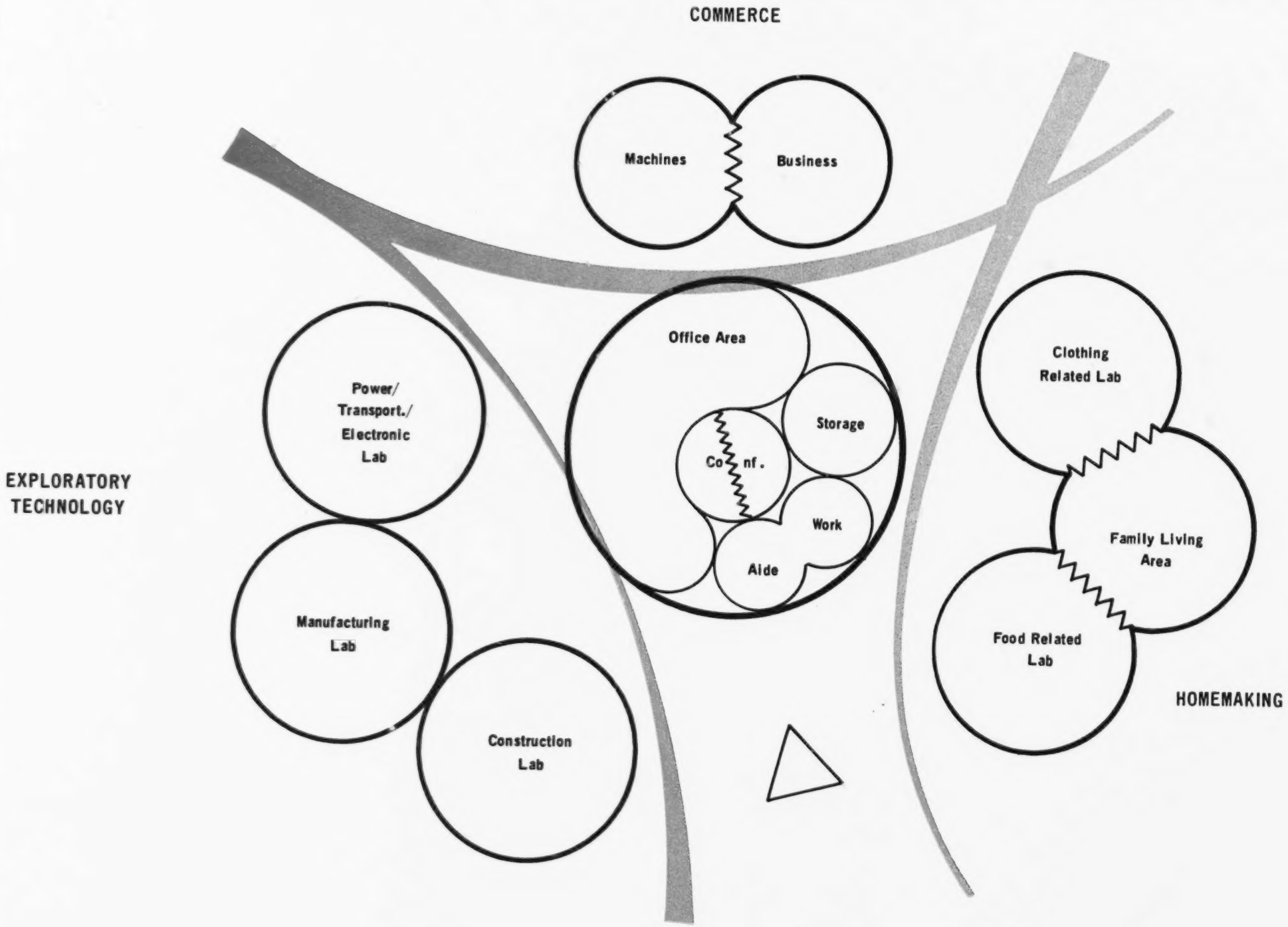
H. PRACTICAL ARTS CENTER (continued)

Space	Unit Cap.	No. Units	Total Net Area	Description of Functions and Special Considerations
2. HOMEMAKING (continued)				
c. Family Living Area	28	1	(1,500)	. Typical efficiency apartment to be used for instruction of furniture arrangement, cooking, social hospitality, apartment decor, etc. Space to include living room, kitchen, bathroom, bedroom, utility room, and storage rooms. . Storage area should be directly accessible to apartment (minimum 100 sq.ft.). . Direct access to Foods Related Laboratory, Clothing Laboratory, Department Center, and main traffic circulation.
3. COMMERCE			2,000	Provide an introduction to clerical, business and commerce concepts. Direct access to Department Center. Rooms are expandable into a medium-group instruction area.
a. Typing/Machines (expandable)	25	1	(1,000)	. Provide electrical connections to all student stations for variety of electrical machines, e.g., typewriters, adding machines, etc. . Equip with peripheral casework counter top with storage facilities, counter-level electrical outlets, and sink. Also provide individual tote-tray storage.

Space	Unit Cap.	No. Units	Total Net Area	Description of Functions and Special Considerations
3. COMMERCE (continued)				
b. Business/Economics/Sales (expandable)	25	1	(1,000)	. Basic furniture consists of bookkeeping desks and chairs. . Provide area for check-out counter, display counter and clerks. Equip with peripheral casework counter with storage facilities, counter-level electrical outlets, and sink.
4. DEPARTMENT CENTER			1,320	Homebase for all instructors in the Practical Arts Center. Provides for office space, storage, work area, conference area, and aide. Direct access into departmental classrooms.
a. Office Area (ea. @ 60 sq.ft.)	12	1	(720)	. Open area that is zoned by casework and visual partitions into spaces for instructors of IA, Homemaking and Commerce.
b. Reception/Aide	2	1	(100)	. Entry area into Department Center. Aide assists teachers in duplicating materials, serves as a receptionist, schedules conference area, aids in supply distribution, etc.
c. Work Area	-	1	(100)	. Used by instructors and aide for preparation of instructional materials. Direct access to Conference Room, Departmental Storage, and Office Area. "Flows" into Reception/Aide Area.

Space	Unit Cap.	No. Units	Total Net Area	Description of Functions and Special Considerations
4. DEPARTMENT CENTER (continued)				
d. Conference Room (divisible)	12	1	(200)	. Used for departmental meetings and small group meetings. Relate to Reception/Aide Area, Office Area, and to IA for small group planning. . Arranged with conference tables and chairs. Provide movable partitions to divide area into two rooms.
e. Departmental Storage	-	1	(200)	. Storage of clerical supplies, books and related items. Provide movable storage shelves. Direct access to Reception/Aide Area.

PRACTICAL ARTS CENTER



I. DINING/ACTIVITY CENTER

1. Food Preparation/Service
2. Student Dining Area
3. Boys' and Girls' Rest Room
4. Faculty Dining/Lounge
5. Token/Coin/Ticket Booth
6. Student Store
7. Student Government
8. P.E./Activity Area
9. Student Patio Area

The Dining/Activity Center provides space for food preparation and storage, separate areas for student and faculty serving and dining, student store, and a P.E./Activity Area. In addition to its basic usage as a student dining area, this space should be arranged and planned so it may be divided for instructional programs, informal student activities, and student government functions.

The P.E./Activity Area serves both as a P.E. instructional area, health classroom, and as a noon recreational/activity area for pupils. In addition, this space should be arranged to permit its utilization by the community during the evening, weekends or summer.

I. DINING/ACTIVITY CENTER

Space	Unit Cap.	No. Units	Total Net Area	Description of Functions and Special Considerations
1. FOOD PREPARATION/SERVICE			4,410	Preparation of food and variety of food service that offers "government platter" or "ala carte" food by means of serving line, "scramble" system and back-load vending machines. Observe flow pattern of foods from delivery to storage to preparation to serving.
a. Kitchen	-	-	(2,400)	. Food preparation area for 1200 students and faculty members. Provision to back-load mechanical vending machines from this area. . Orient a serving area to both the Student Dining Area and also to Faculty Dining/ Lounge.
b. Storage	-	-	-	. Relate to delivery entrance (use loading dock area provided for maintenance/operation).
1) Walk-In Refrigerator/ Freezer	-	-	(150)	. Food storage area for both cooling foods, e.g., 38°F., and freezing foods, e.g., 0°F.
2) Dry Storage	-	1	(300)	. Provide adjustable metal shelves and mobile storage bins.
c. Office	-	1	(80)	. Office for manager and dietician. Direct access into Food Preparation Area. Also provide visual view of Food Preparation Area.

I. DINING/ACTIVITY CENTER (continued)

Space	Unit Cap.	No. Units	Total Net Area	Description of Functions and Special Considerations
1. FOOD PREPARATION/SERVICE (continued)				
d. Locker/Dressing Area	-	1	(80)	. Provide lockers for storage of cooks' personal belongings. Include lavatory, water closet and dressing facilities. . Direct access into the Food Preparation Area.
e. Food Service Area	-	1	(1,400)	. Consider variety of feeding procedures that include "scramble" system, coin operated vending machines, and counter service. Relate to cafeteria entrances and also relate to P.E./Activity Area. . Consider dividing serving area so as to use only portion of serving area and dining area for evening or summer food service.
2. STUDENT DINING AREA (10 sq.ft. per pupil)	500	1	5,000	Designed to house and feed a maximum of 500 pupils. Provide a variety of seating arrangements that lends to a feeling of informality. Easy egress from serving lines and easy access to tray/dish return without crossing of traffic. Area should be divisible into several areas by means of movable partitions. These areas would serve as student meeting areas and instructional spaces. Each area should permit the use of electrical and audio-visual equipment; TV receival; and acoustical, visual and thermal conditions that support an instructional of group meeting activity.

I. DINING/ACTIVITY CENTER (continued)

Space	Unit Cap.	No. Units	Total Net Area	Description of Functions and Special Considerations
2. STUDENT DINING AREA (continued)				Portions of the area should be lockable so a section or sections of the dining area may be used during evening or summer activities. Relate to an outside "patio" area that would serve as a "common" area for: students after eating lunch; for P.E./ Activity Area; and for community activities.
3. BOYS' AND GIRLS' REST ROOMS			-	The dining area should relate closely to gang-type toilet facilities that would serve the students approaching and leaving the dining area, P.E./lunch activity area, and community during evening or summer activities.
4. FACULTY DINING/LOUNGE	50	-	1,200	Provide an informal and aesthetically pleasing facility. Area should be zoned into dining area and lounge area with portable visual partition. Dining area to contain variety of round and square 4-6 place tables. Lounge area to contain variety of soft-cushioned chairs. Faculty served by means of separate serving area apart from pupil serving area. Relate to Faculty Toilet Facilities. Direct access to a screened exterior faculty patio.

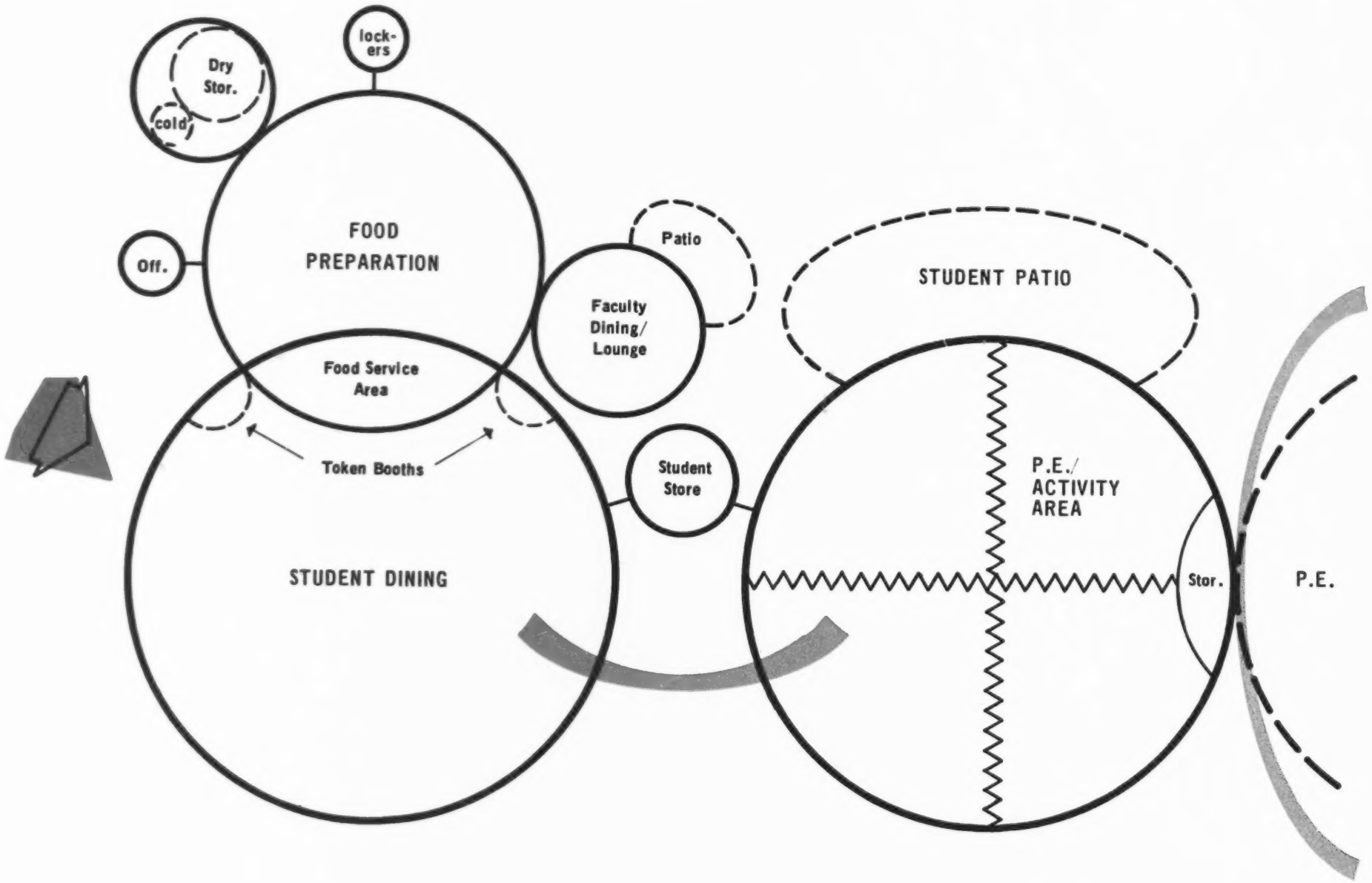
I. *DINING/ACTIVITY CENTER* (continued)

Space	Unit Cap.	No. Units	Total Net Area	Description of Functions and Special Considerations
5. TOKEN/COIN/TICKET BOOTH (ea. @ 35 sq.ft.)	2	2	70	Located near main entrances to Food Preparation/Service Area. One booth should relate to Student Store and one/or the same booth should relate to student patio area and P.E./Activity Area. Cashier-type windows should relate both to hall traffic and Student Dining Area traffic. Equipped for dispensing tickets/tokens/making change.
6. STUDENT STORE	10	1	300	Storage, display and sale of school supplies, paperback books, school banners, etc. Provide separate entrance and exit to aid circulation. Relate to Student Dining Area, student "patio" area and P.E./Activity Area. Also to Commerce Area in Practical Arts Center.
7. STUDENT GOVERNMENT			-	Meetings and activities of student government can take place in small conference areas in the dining area or classrooms.
8. P.E./ACTIVITY AREA (ea. @ 2000 sq.ft., divisible, expandable)	50	2	4,200	Used by pupils during lunch period for informal and recreational purposes. These areas are shared with the P.E.Department and may be scheduled for health classes and as auxiliary gyms prior/following lunch periods. Also areas will serve as an evening and summer recreation facility. Direct access to Student Dining Area, P.E. facilities, student "patio" area, and P.E./Activity Storage Area.

I. DINING/ACTIVITY CENTER (continued)

Space	Unit Cap.	No. Units	Total Net Area	Description of Functions and Special Considerations
8. P.E./ACTIVITY AREA (continued)				Provide movable partition to expand area into one large space. Also divisible with partitions into four separate areas. Non-wood floor surface with minimum 10 ft. ceiling. Make provisions to "isolate" area from remainder of school for after school and summer usage.
a. P.E./Activity Storage (ea. @ 100 sq.ft.)	-	2	(200)	. Storage of P.E./Activity Area equipment. Provide two doors, one leading into each half of P.E./Activity Area.
9. STUDENT PATIO AREA	-	-	-	. "Patio" area for students to relax and meet informally. Should relate to Student Dining Area, P.E./Activity Area and Pool Area. The area would be used both for school and community activities.

DINING/ACTIVITY CENTER



J. PHYSICAL EDUCATION

1. Main Gymnasium
2. Remedial Gym
3. P.E./Activity Area
4. Offices/Dressing Rooms
5. Boys' Locker Area
6. Girls' Locker Area
7. Pool Area
8. Field Area

The physical education program provides opportunity for each student to develop physically, mentally and socially. A program should be developed that will aid in the development of physical growth and fitness and a favorable attitude toward continuing some aspect of physical exercise for recreational purposes. Therefore, the physical education plant must provide both indoor and outdoor facilities to familiarize students with various sports and games.

J. PHYSICAL EDUCATION

Space	Unit Cap.	No. Units	Total Net Area	Description of Functions and Special Considerations
1. MAIN GYMNASIUM			11,100	The nucleus of all P.E. facilities. Relate to outside play and Field Area, P.E./ Activity Area, and Pool Area. Intra-school athletic activities should be well organized. The middle school need not provide for spectator crowds as minimal interschool competition occurs.
a. Gymnasium (divisible)	-	1	(10,800)	. Divide gymnasium into two units with electrically operated partition (one area for boys and one area for girls); each unit should be approximately 60 ft.by 90 ft. Minimum ceiling clearance of 22 ft. . Walls should be capable of supporting gym equipment, e.g., basketball goals. . Provide two separate basketball courts and cross courts with movable baskets. . Direct access to P.E./Activity Area with visual supervision of gymnasium from Teacher Office Area.
b. Gymnasium Storage (ea. @ 150 sq.ft.)	-	2	(300)	. Storage areas for larger portable gym equipment. Shelving provided for smaller gym equipment. . One entrance to boys' gym and one entrance to girls' gym area. Provide double doorway without sills for movement of portable P.E. equipment.

J. PHYSICAL EDUCATION (continued)

Space	Unit Cap.	No. Units	Total Net Area	Description of Functions and Special Considerations
2. REMEDIAL GYM	18	1	1,100	Instructional station for small group physical development with minimum ceiling height of 10 feet. Include area for securing of equipment (about 50 sq.ft.). Student can use Gym Dressing/Shower facilities; therefore, relate to P.E. Locker Area. Also relate to P.E. Teacher Office Area.
3. P.E./ACTIVITY AREA	50	2	(4,200)*	Used by pupils as auxiliary gym prior/following lunch periods. Areas used as informal recreational centers during lunch periods. Divide each area with movable partitions for classroom usage, e.g., health classes.
4. OFFICES/DRESSING ROOMS			820	Offices/dressing facilities for P.E.swimming and remedial gym staff. Office area provides visual supervision of Gymnasium. Relate to Remedial Gym and auxiliary P.E./Activity Areas.
a. Men's Office (ea. @ 60 sq.ft.)	5	1	(300)	. Relate to Boys' Locker Area. Immediate access and visual supervision of Gymnasium.
b. Men's Dressing/Shower Area	6	1	(100)	. Immediate access to Men's P.E. Office. Provide lockers, shower facilities and toilet facilities.

* Footage allocated in Dining/Activity Center.

J. PHYSICAL EDUCATION (continued)

Space	Unit Cap.	No. Units	Total Net Area	Description of Functions and Special Considerations
4. OFFICES/DRESSING ROOMS (continued)				
c. Women's P.E. Office (ea. @ 60 sq.ft.)	5	1	(300)	. Relate to Girls' Locker Area. Immediate access and visual supervision of Gymnasium.
d. Women's P.E. Dressing/Locker Area	6	1	(120)	. Immediate access to Women's P.E. Office. Provide lockers, shower facilities and toilet facilities.
5. BOYS' LOCKER AREA			2,660	Put on same level as Gymnasium.
a. Locker Area	100	1	(2,000)	. Direct access to Gymnasium and Swimming Pool and into Shower/Drying Area. Relate to corridor entrance/exit within proximity of office area. Provide for ease of supervision by instructors. . Zone locker area for security separation for community use as swimming pool dressing area. . Equip with minimum of 80 eight and one lockers (8 box, 1 dressing) on raised base, with provisions to add approximately 15 additional eight and one lockers if enrollment exceeds 1200 pupils. . Fixed benches installed in front of each tier of lockers. . Provide ventilation of lockers and locker area.

J. PHYSICAL EDUCATION (continued)

Space	Unit Cap.	No. Units	Total Net Area	Description of Functions and Special Considerations
5. BOYS' LOCKER AREA (continued)				
a. Locker Area (continued)				. Provide lockable doors between locker room and shower/dry/towel area.
b. Shower/Dry/Towel Area	-	-	-	. Provide non-slip floor surface and tiled walls.
1) Gang Shower	-	-	(270)	. Gang-type walk-through shower area with remote temperature control. Provide a mixing water/soap spray at entrance to shower area with remote control. . Equip with shower heads that are flush with wall. . Direct access from Locker Area and to Dry Room. Students must pass towel dispensing area as they leave shower area.
2) Private Showers (ea. @ 20 sq.ft.)	1	4	(80)	. Relate to Dry Room and Gang Showers with direct access to Locker Room.
3) Toilets	-	-	-	. Provide two enclosed toilets in shower area.
4) Dry Room	-	1	(250)	. Enter from shower area. Room provides space for toweling after shower. Towels issued prior to entering Dry Room with provisions to deposit towel in disposal bin as exiting Dry Room. . Direct access into Locker Area.

J. PHYSICAL EDUCATION (continued)

Space	Unit Cap.	No. Units	Total Net Area	Description of Functions and Special Considerations
5. BOYS' LOCKER AREA (continued)				
b. Shower/Dry/Towel Area (continued)				
5) Towel Room	-	1	(60)	. Provisions for storage of clean and soiled towels. Towel disposal bin at exit of Dry Room. . Towel issue area related to Gang Shower/ Private Shower exit. Dutch doors opening for issue.
6. GIRLS' LOCKER AREA			2,700	Same as Boys' Locker Area except provide 6 private showers and 3 enclosed toilets. This slightly increases square footage needed for Girls' Locker Area.
7. POOL AREA			9,530	Area for swimming instruction, recreation and joint school/community usage. Relate to community access routes, P.E./Activity Area and Student Patio Area. Pool area must be isolated from school yet have access to portions of Girls'/Boys' Locker Areas and shower facilities in Gymnasium. Make provisions so only portion of locker area accessible for after school community usage. Consideration for year-round heating, ventilation, and humidity control. Limited fenestration, ceiling height must permit diving (minimum 22 ft.).

J. PHYSICAL EDUCATION

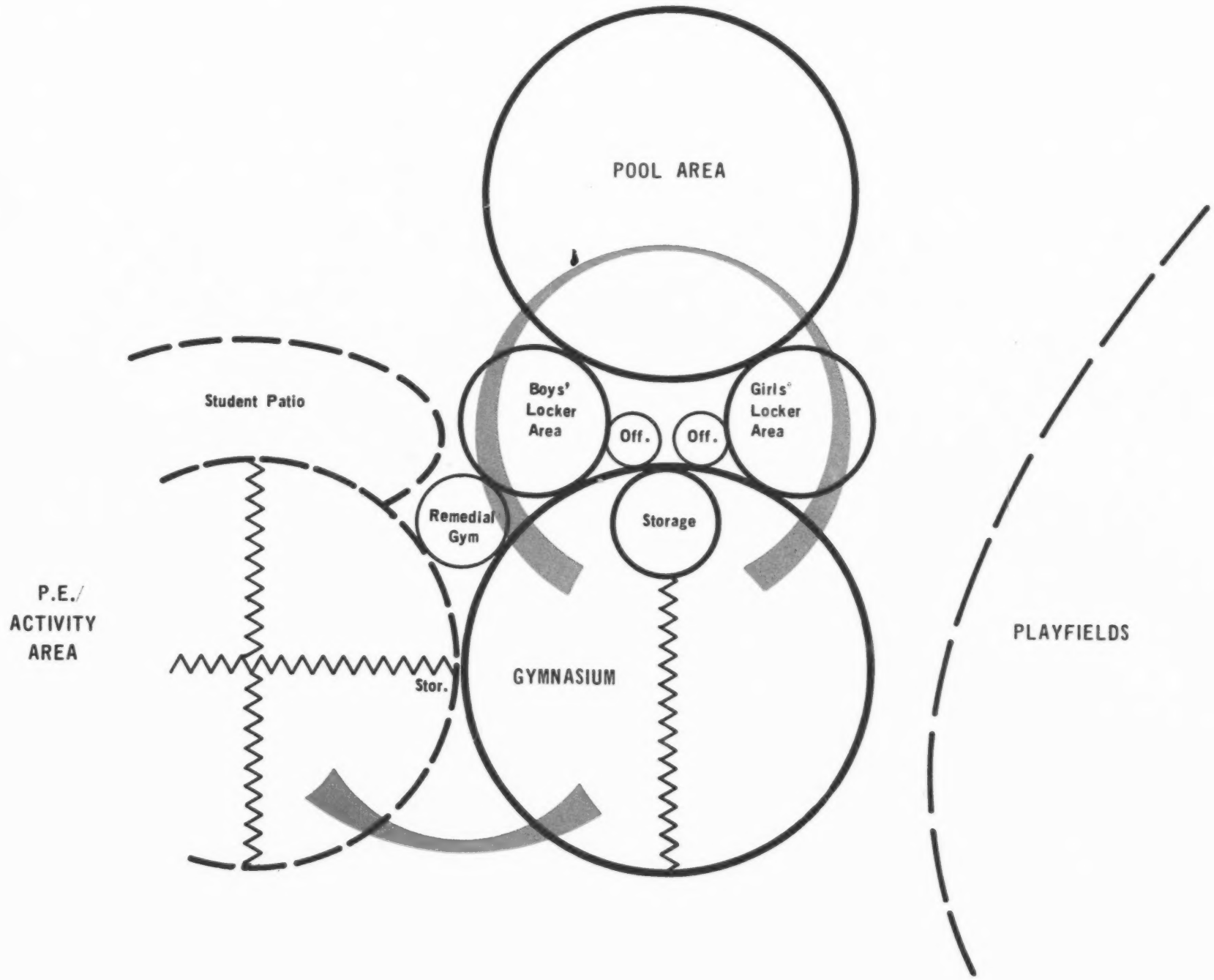
Space	Unit Cap.	No. Units	Total Net Area	Description of Functions and Special Considerations
7. POOL AREA (continued)				Deck area of a non-slip material and wide enough to provide instructional areas. Provide loudspeaker system with convenient mike jacks.
a. Swimming Pool	80	1	(3,380)	. Dimensions 45'x 75'1". Depth of pool: 3'6" at ends and 4'6" in middle. . Provide minimum of two teaching stations. . Clearly mark pool with six competitive swimming lanes marked with tiles in pool floor. Center lanes 7' and side lanes 8½'.
b. Diving Pool	-	1	(1,050)	. Separate pool for diving instruction. Minimum depth of diving pool 12 ft. Size 30'x 35' with two one-meter diving boards.
c. Pool Office	-	1	(250)	. Facilities for pool manager during evening and summer recreational usage. Includes dressing area for instructors. Visual supervision of pool area. . Relate to pool area entrance and also to locker/shower area.
d. Storage	-	1	(150)	. Storage of pool cleaning equipment.
e. Filtration/Utilities	-	1	(200)	. Mechanical equipment.
f. Deck Circulation	-	1	(4,500)	. Instructional space and circulation area around swimming and diving pools.

J. PHYSICAL EDUCATION (continued)

Space	Unit Cap.	No. Units	Total Net Area	Description of Functions and Special Considerations
8. FIELD AREA			-	Relate to Main Gymnasium and Locker Area. Area for play and athletic fields. Provide play area that would permit organized activities for soccer, softball, etc.

Total outdoor and indoor recreational and physical education space must equal a minimum of 100 square feet per pupil enrolled.

PHYSICAL EDUCATION CENTER



K. MAINTENANCE AND OPERATION

1. Receival/Storage/Repair Area
2. Men's Change Room
3. Women's Change Room
4. Anteroom
5. Custodian's Office
6. Custodial Storage Areas

The service facility is required for coordination of maintenance functions and the receipt and distribution of instructional and maintenance supplies, with separate facilities for the storage of instructional and maintenance supplies.

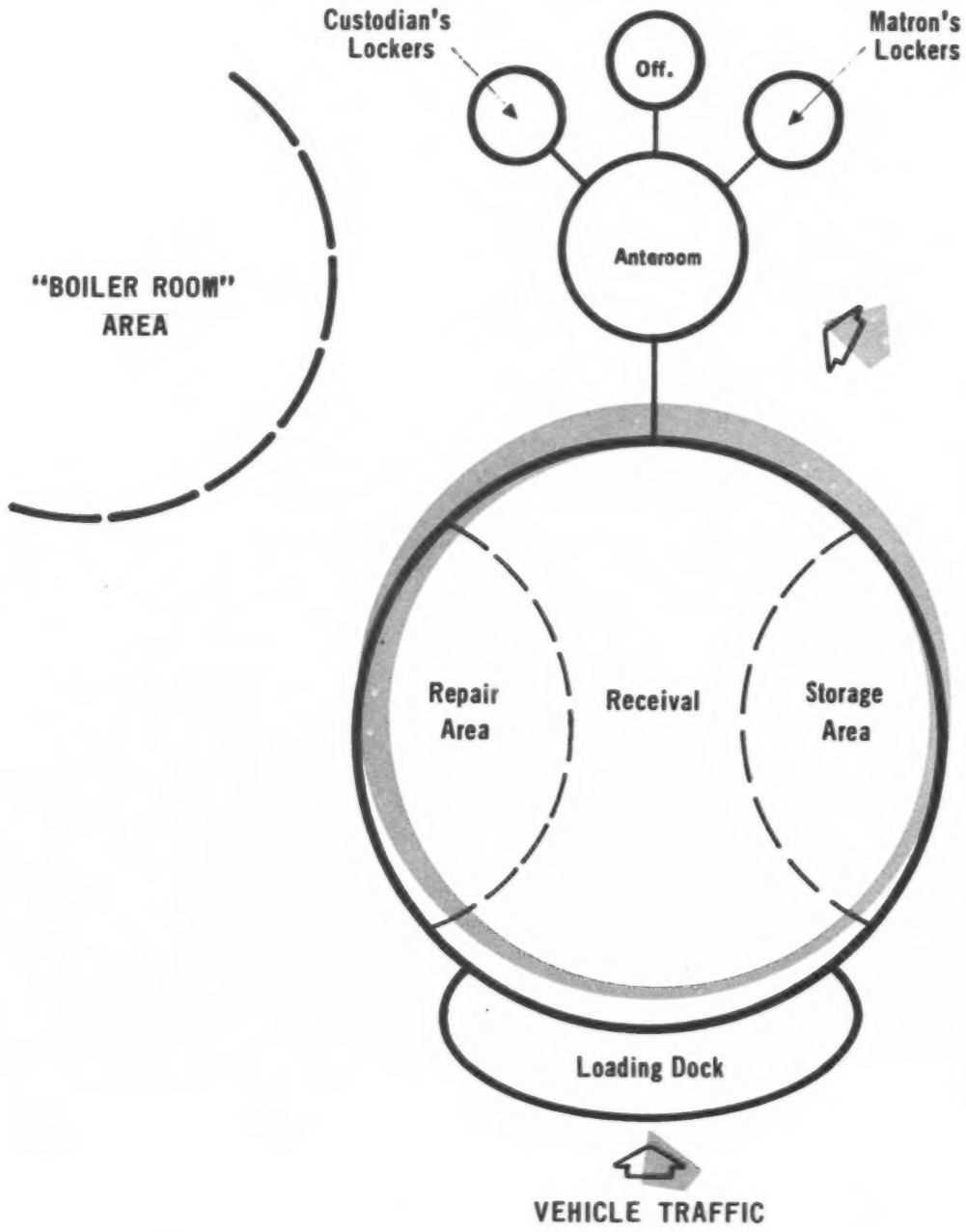
The facility should include in addition to storage areas for maintenance of tools and equipment, a minor repairs area, toilets, change rooms, with shower, toilet and lockers for men of the custodial buildings and grounds staff and for women custodial personnel, and an office area for the custodian. Scattered through the building should be custodial storage areas that provide space for a standard slop-sink with hot and cold running water, room for storage of mops, carts, brooms, shelves for storage of cleaning and preservative supplies.

K. MAINTENANCE AND OPERATION

Space	Unit Cap.	No. Units	Total Net Area	Description of Functions and Special Considerations
1. RECEIVAL/STORAGE/REPAIR AREA	-	1	1,200	Locate adjacent to main "boiler room" or mechanical area of buildings. One open space that zones area for supply receival, supply storage and repair of items. Separate areas with security-type provisions. Repair work area should permit security of tools, repairable items and new parts. Provide area with complete communication system (e.g., P.A., telephone, clock) and provide adjustable shelving in storage zone. Also provision should be made for running water and lavatory. Provide loading dock with overhead door entrance for delivery of supplies. Loading dock should be easily accessible for truck delivery.
2. MEN'S CHANGE ROOM	-	1	150	Direct access to Anteroom area. Provide toilet, (1 WC, 1 urinal, 1 lavatory) 1 shower and lockers in this area for 6 men.
3. WOMEN'S CHANGE ROOM	-	1	175	Direct access to Anteroom area. Provide toilet (2 WC, 1 lavatory), 1 shower and lockers in this area for 12 women.

K. MAINTENANCE AND OPERATION (continued)

Space	Unit Cap	No. Units	Total Net Area	Description of Functions and Special Considerations
4. ANTEROOM	-	1	150	Direct access to main traffic circulation, Custodian's office and Receival/Storage/Repair Area. Equip with bulletin board and lounge furniture.
5. CUSTODIAN'S OFFICE	-	1	75	Direct access to Anteroom area. Relate to Receival/Storage/Repair area.
6. CUSTODIAL STORAGE AREAS	-	12	840	Space for storage of daily custodial tools and supplies. To be located appropriately for convenience, two to four stations per floor level. Equip with service sink with floor drain, hot and cold water. Provide shelving for storage of mops, brooms, and supplies. Open floor space for cart, polisher or vacuum.


Custodian's Lockers
Off.
Matron's Lockers
Anteroom
"BOILER ROOM" AREA
Repair Area
Receival
Storage Area
Loading Dock
VEHICLE TRAFFIC

A N D F I N A L L Y . . . .

The preceding sections of these Educational Criteria contain a description of the planning process for the new Philadelphia middle school. From a brief delineation of both present and foreseeable educational programs in middle schools, and from conferences with educators of the District, facility planning assumptions were derived. Design objectives and subsequent facility implications were then developed -- all leading to the detailed facility specifications -- in which each space and its relationship to other spaces is described.

This document represents the thinking of many individuals both within and outside the School District of Philadelphia. As such, it is expected that the resulting school design will serve the needs of the students and staff of the District, both for the present and the foreseeable future.